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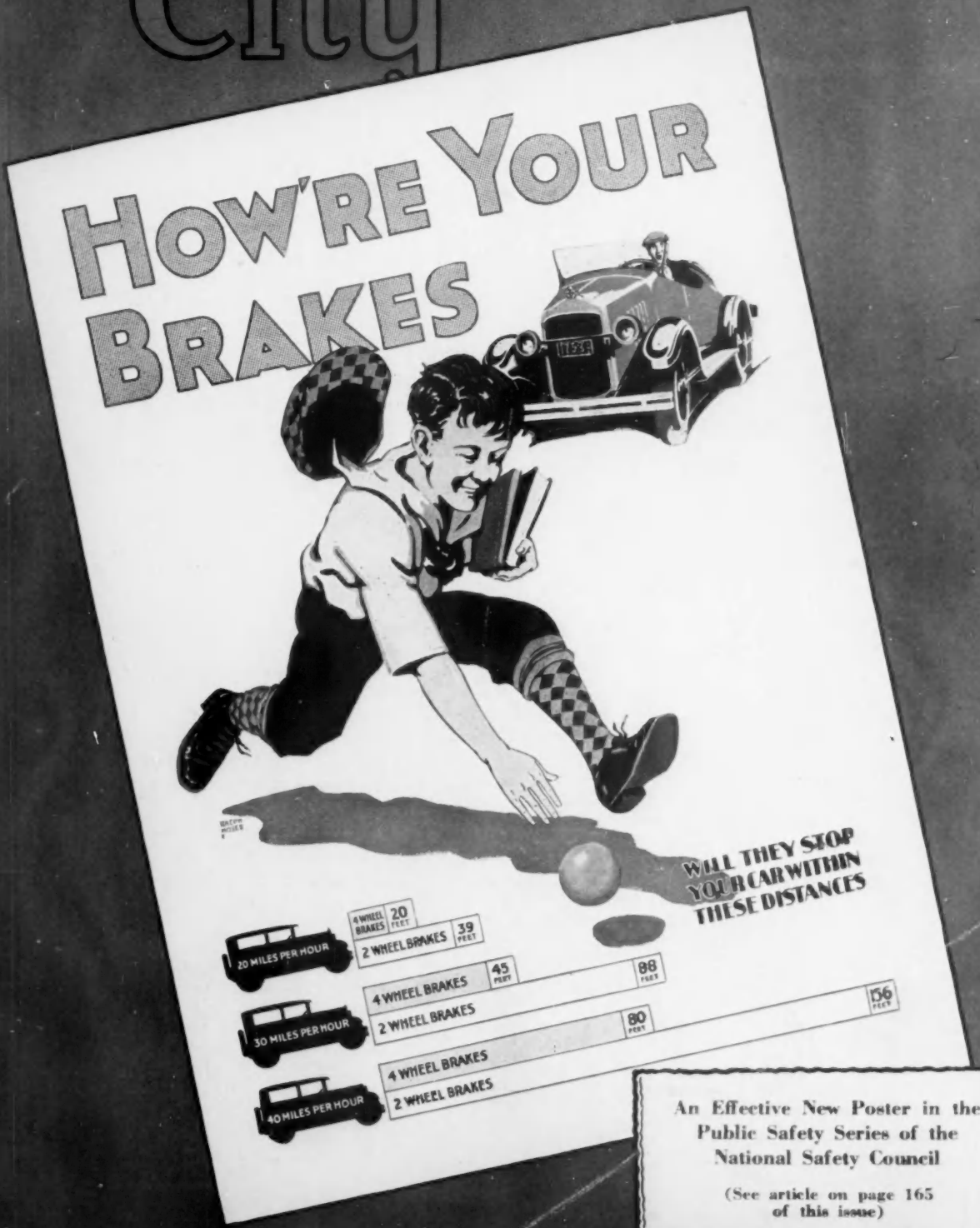
The American City


HOW'RE YOUR BRAKES
WILL THEY STOP YOUR CAR WITHIN THESE DISTANCES
20 MILES PER HOUR
4 WHEEL BRAKES 20 FEET
2 WHEEL BRAKES 39 FEET
30 MILES PER HOUR
4 WHEEL BRAKES 45 FEET
2 WHEEL BRAKES 88 FEET
40 MILES PER HOUR
4 WHEEL BRAKES 80 FEET
2 WHEEL BRAKES 156 FEET

An Effective New Poster in the Public Safety Series of the National Safety Council

(See article on page 165 of this issue)

Noted Pilot favors
ASPHALT RUNWAYS
for
Nation's Airports

CAPT. FRANK HAWKS
whose most recent aerial triumph was to smash the coast-to-coast non-stop record, which he bettered by 37 minutes on February 5 last.

A seasoned and expert airplane pilot, Captain Frank Hawks, has a genuine understanding of the problems faced by aviation today. Not the least of these problems is that concerning runways for airports.

To perform properly its function of receiving descending planes and sending outgoing planes safely on their way, Captain Hawks believes the runway surface should be firm, yet resilient; it should also be free from dust and thoroughly waterproof at all times.

These qualities should be present not during certain seasons, but throughout the whole year. And the surface should be capable of giving years of service with little or no repairs.

In the opinion of Captain Hawks, an asphalt runway answers these requirements fully. Its resilient surface absorbs impact. It is waterproof and dustless. Varying climatic conditions do not in any way lessen its efficiency. An asphalt runway may be opened to traffic immediately after it is constructed and will then serve for years with little or no further attention.

We shall be pleased to go fully into the matter of asphalt runways with those in charge of airport construction.

TEXACO
ASPHALT

The Texas Company
ASPHALT SALES DEPT.
17 Battery Place, New York City

New York Boston Cleveland Dallas
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The American City

Issued Monthly by the

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EDGAR J. BUTTENHEIM
President and Manager

HAROLD S. BUTTENHEIM
Editor

THEODORE R. KENDALL
Secretary and Engineering Editor

H. M. OLMSTED M. V. FULLER
ARTHUR G. MATHEWS
MARTHA CANDLER
Associate Editors

HERBERT K. SAXE
Treasurer

PRENTICE C. FORD
Assistant Manager

MYRON MacLEOD
Eastern Advertising Manager

Branch Offices

Daily News Building, Chicago
TOM DIX, Vice-President

642 Hanna Building, Cleveland
GEORGE S. CONOVER, Manager

155 Montgomery Street, San Francisco
ROGER A. JOHNSTONE, Manager

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The offices of THE AMERICAN CITY are headquarters for information on equipment for municipal and county work. If you want catalogs, prices or names of manufacturers, write or wire our main office in New York.

In addition to what is published in THE AMERICAN CITY, other material, including articles, lists and bibliographies on a wide variety of municipal and civic subjects, appear each year in

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Edition of 1929 now ready, 786 pages

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A *Cast Iron* Culvert
is more than a drain pipe . . it is a permanent foundation

A GOOD road is no stronger than its culverts. Why take the chance of having a smooth and costly road undermined by a faulty or inadequate drainage system? When the culverts are made of cast iron, the vulnerable points become points of great strength.

Cast iron is the ideal material for road culverts. It resists the double attack of heat and frost. It withstands the action of corrosive soils. And, it lends its tremendous compressive strength to reinforce the road foundation.

Roads that are built to last deserve nothing less than permanent *cast iron* culverts. Over a period of years they are the most economical. Speed of installation is still another reason why cast iron culverts are specified by construction engineers. Culverts made of *cast iron* can be quickly laid by unskilled labor *in any sort of weather.*

Write for information on U. S. culverts, and facts about deLavaud — the cast iron pipe with 25% greater strength.

If you are faced by any unusual road drainage problem, our engineers will be glad to cooperate with you in working out a satisfactory solution.

United States Cast Iron Pipe and Foundry Co., Burlington, New Jersey

Sales Offices: Chicago, Philadelphia, Buffalo, Cleveland, New York, San Francisco, Los Angeles, Seattle, Birmingham, Dallas, Kansas City, Pittsburgh, Minneapolis

During May we hope you will remember to mention THE AMERICAN CITY

Two New Attempts to Abolish City Manager Government in Cleveland

TWO new charter proposals are being presented to the voters of Cleveland. One is the so-called Davis charter, which abolishes both the city manager and the proportional representation provisions and sets up a mayor and ward councilman plan of government. The Davis proposal, which has been twice defeated, has been initiated by another group but is receiving the support of the Davis followers.

The other proposal, which is being prepared by the friends of former councilman Peter Witt, provides for a mayor-council form of government in place of the city manager form. It proposes a council of nine elected at large by the proportional representation method. The mayor is also made elective and is given a fixed salary of $18,000. It constitutes what is generally called a strong mayor form of government.

These reported attempts to upset the Cleveland charter, and the recent failure of bills in the New York and Pennsylvania Legislatures which would have authorized the proportional representation method of electing city officials, give special interest to the letter from former Mayor Samuel A. Carlson, of Jamestown, N. Y. published on page 122 of this issue. THE AMERICAN CITY will welcome comments on this proposal of plural voting or appointive councilmen as an alternative to P. R.

Permanent Registration, Optional Voting Machines and Other Improvements in Ohio's Election Methods

TWELVE years of unflagging effort on the part of the Citizens League of Cleveland have been rewarded by the adoption by the 1929 Legislature of a new election code which will go into effect on January 1, 1930. Some of the provisions advocated by the League were eliminated by the Legislature; but the new law contains so many progressive features, such as permanent registration, easy recount of ballots, optional voting machine, and witnesses and challengers for all groups, that it marks a vast advance over the present confused, conflicting, and expensive election machinery of Ohio. It is predicted that the new law will reduce the cost of elections in Ohio by at least $1,000,000 annually.

The main provisions of the new code are summarized in Greater Cleveland for April 10. Among them are:

Permanent registration is fully provided whereby a voter, after the 1930 registration, need not register again until he changes his place of residence. He then can make the change any time during the year by mail or by appearing in person at the office of the board. Adequate safeguards are thrown about registration to detect and prevent fraud.

Every voter in a registration precinct will be required to sign his name to the poll list before receiving his ballot. This signature will be compared with his original signature on the registration card. This is one of the best safeguards against fraud to be found in the new law.

Sick and disabled voters, as well as absent voters, are given an opportunity to vote under the new law.

Items and Abstracts *for* MAYORS AND CITY MANAGERS

A recount of the ballots in any precinct can be obtained on deposit of ten dollars with the election board to cover the cost. If three per cent error is shown, the ten dollars is refunded. A recount of all precincts can be had by such deposit. If the recount changes the result of the election the total deposit is refunded.

The voting machine may be adopted for use in any county or city by a majority vote of the people. Under present court ruling the voting machine is unconstitutional; but it is the general belief that when another test case is brought before the supreme court the former decision of years ago will be reversed.

The provisions against corrupt practices and fraud in elections have generally been strengthened; and the penalty provisions have been made much more severe.

Let Us Invest Law Enforcement With Romance!

If, instead of the glamour of romance and heroism which our American imaginative minds too frequently throw around those who break the law, we would invest with a little romance and heroism those thousands of our officers who are endeavoring to enforce the law it would itself decrease crime. Praise and respect for those who properly enforce the laws, and daily condemnation of those who defy the laws, would help. Perhaps a little better proportioned balance of news concerning those criminals who are convicted and punished would serve to instill the fear of the law.

HERBERT HOOVER.

(From the President's address in New York, April 22, 1929.)

Eminent Domain Authorized for Insurance Company Housing Projects in First Class Cities of New Jersey

THE joint proposal of the city of Newark and the Prudential Insurance Co., a preliminary announcement of which was made on this page of THE AMERICAN CITY in January, was approved by the Legislature last month, effective immediately. Under the new acts (Chapters 201 and 202, P. L. 1929) insurance companies in New Jersey are authorized to go into the housing business on a limited-dividend basis.

To secure the benefit of these laws, such projects must be for the acquisition of tracts of land within cities of the first class, "occupied in whole or in part by unsanitary or unsafe structures used as dwellings and for the demolition of such existing structures and for the construction upon such tract of land of new housing facilities in accord with proper standards of sanitation and safety."

When the project is approved by the governing body of the municipality, the city is given the right to acquire by eminent domain lands and structures which the applicant may be unable to acquire by agreement with the owners, and to "convey such lands and structures to such applicant, subject only to the public duties and obligations imposed upon such applicant by this act, any law of this state to the contrary notwithstanding."

The municipality is given the duty, also, to fix the maximum rental per room at a figure which will assure to the insurance company a return of not less than 5 or more than 6 per cent "upon the cost of the entire project after payment of all taxes, insurance, cost of operation and maintenance and an annual amount sufficient to amortize the entire cost of construction of such new housing facilities at the end of a period of twenty years from the completion of the same."

Our Apologies—and Congratulations—to Michigan's Governor

TWO prominent citizens of Michigan have called THE AMERICAN CITY's attention to the inadvertent omission of the name of Governor Fred W. Green of Michigan from the list published on this page last month of governors who have been mayors. That previous to taking his present office on January 1, 1927, Governor Green had been mayor of his home city of Ionia for thirteen consecutive years is stated by Mayor Laird W. Troyer, of Lansing. "Who's Who in America" gives the period as twelve terms, while Ed. D. Engemann, Editor of the *Banner-News*, of Belding, writes:

"I wonder how it came that the name of Fred W. Green, governor of Michigan for the past two years and reelected last fall for another period of two years, was not in the list, particularly because of the fact that prior to his being elected as governor of his state of Michigan, he had served his home city of Ionia for a period of fourteen terms as mayor, so satisfactorily and well that for the greater part of the time he held the office of mayor, he was reelected year after year without opposition. While he was really mayor of Ionia city, we looked on him as mayor of Ionia county and at the time of his renomination the people of Ionia county would not entirely relinquish him to the state, but agreed to 'loan' him to the state for a few years as its governor. Governor Fred W. Green, as mayor of his home town and as governor of his state, has done so much for both, without recompense and with not a thought of personal gain, that I believe his career is so outstanding that it would be well for THE AMERICAN CITY to have a story on him. I believe every mayor and city official who gets or reads your magazine would be glad to know of the mayor-governor's life and works."

Articles Worth the Attention

of city executives include those on pages 85, 96, 105, 107, 108 and 113.

Service Complaints?

An ample storage supply will eliminate them—

UNIFORM pressure throughout the 24 hours is easily maintained with Horton Tanks. Adequate fire protection and uninterrupted service are assured at all times. Repairs can be made while the stored supply meets all demands.

Mr. H. L. Caldwell, President of the Caldwell Engineering Company, writing about a 500,000-gallon Horton Tank which replaced a reservoir at Jacksonville, Illinois, stated, "Another reason for using the steel tank was that the reservoir as it stood was not high enough to produce the necessary hydrostatic pressure for the upper part of the city. The Horton Tank has improved the service throughout the entire distribution system and has materially reduced pumping costs."

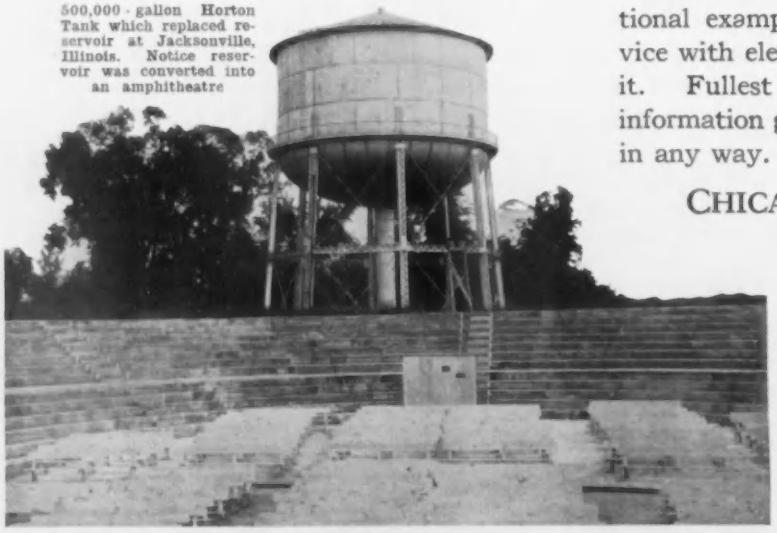
Royal Oak and other cities adjacent to Detroit, Michigan, have secured more uniform pressures, insured sufficient water at all times and reduced costs with the North Woodward Avenue system, which contains elevated storage.

Marcel Pequegnat, Superintendent of the Kitchener, Ontario, Water Commission, says, "The people have realized the money expended in overhead storage has been money well spent."

Our nearest office will send you additional examples of improved water service with elevated storage if you request it. Fullest cooperation and complete information given without obligating you in any way.

CHICAGO BRIDGE AND IRON WORKS

500,000-gallon Horton Tank which replaced reservoir at Jacksonville, Illinois. Notice reservoir was converted into an amphitheatre



Chicago.....2127 Old Colony Bldg.
New York....3108 Hudson Terminal
Cleveland...2236 Union Trust Bldg.
Detroit.....1501 Lafayette Bldg.
Philadelphia...1616 Jefferson Bldg.
Dallas.....3306 Magnolia Bldg.
Atlanta.....1014 Healey Bldg.
San Francisco....1033 Rialto Bldg.
Havana, Cuba.....Apartado 2507

HORTON TANKS

A08-Gray

The Activated Sludge Process of Sewage Treatment

PRE-TREATMENT at the Des Plaines River works, Chicago, at Milwaukee, Indianapolis, Lodi and Pasadena, is by fine screening. This includes three plants where fertilizer is produced, as with the limited percentage of removal of solids desired, fine screens generally take less space and are less costly than tanks. In some situations, however, it is possible that shallow tanks providing a brief detention may be quite as cheap by serving as well for the removal of grease by skimming. At Houston the sewage is merely coarse-screened before aeration.

The Manchester system of spiral flow in aeration is adopted at the North Side Works and in one unit at the Des Plaines River Works, Chicago, at Indianapolis, Pomona and Harbor City, these being in general the newer plants. At Pasadena, experiments have shown no advantages in spiral flow, probably due to the narrow width of tank. At Harbor City, perforated pipes were adopted in place of diffuser plates for economical reasons, in a temporary plant, but with apparently good results. At Pasadena, the Norton plate has replaced the Filtros plate used heretofore, being durable and efficient and no more expensive. The experiments in mechanical agitation conducted at the Des Plaines River works have not been carried far enough to arrive at conclusions.

The amount of air required is generally between 1 and 2 cubic feet per gallon of sewage, the lowest requirements being at Milwaukee, 0.95; Calumet, 0.9; Des Plaines River, 1.25; Indianapolis, 1.1; and Pomona, 1.3; and the highest being at the two plants at Houston, 2.0, and Grand Canyon, about 4. It will be noted that in general, plants employing spiral flow use less air than those in the ridge and furrow systems, but the bare figures may be grossly misleading without considering the other uses to which air is applied at the plant, such as for air lift at Grand Canyon and Houston and sludge filters at Pasadena.

A strict comparison of costs between the several plants should also be taken with reserve, as locality, size of plant and many other factors enter. Such as have been obtainable are as follows:

	Cost of Activated Sludge Plant Construction Per m.g.d. Capacity	Operation[1] Per m.g.
Chicago—North Side	$ 97,000[2]	.....
Chicago—Des Plaines River	252,000[3]	.....
Indianapolis	40,500	$9.73
Milwaukee	99,000	16.80
Lodi	75,000	21.30
Pomona	80,600	25.90[5]
Pasadena	86,500	44.75[5]
Harbor City	37,000	.....
Grand Canyon	485,000[4]	475.60
Houston—South Side	22,000	13.15
Houston—North Side	24,500	17.50

[1]Exclusive of fixed charges.
[2]Exclusive of sludge digestion.
[3]Including experimental features.
[4]Including connection trunk sewer and outfall.
[5]Exclusive of revenue from fertilizer.

Prepared from a report on methods of sewage treatment, made by the Comptroller and the Chief Engineer to the Board of Estimate and Apportionment, New York.

Items and Abstracts *on* WATER AND SEWERAGE

Water Softening by the Lime Soda Process

THE amounts of lime and soda ash required for water softening by the lime soda process can be calculated from an analysis of the water to be treated. After adding the necessary chemicals and agitating the water for the desired length of time, the water is passed through the settling basins to remove the precipitated hardness. The period of sedimentation allowed varies at different plants, according to the composition of the water and other factors. From four to twelve hours is usually sufficient. The temperature of the water is important, low temperatures tending to retard the chemical reactions involved. The use of clarifiers facilitates the removal of the sludge.

Unfortunately, the application of the lime-soda process in practice is not always as simple as the above description would indicate. One of the difficulties encountered, particularly with waters high in magnesium, is that maximum reduction of hardness can only be effected by the use of chemicals in excess of the theoretical amounts necessary. Modifications which have been devised to cope with this situation include split treatment, return of excess sludge, and the use of coagulants.

Split treatment consists in overtreating the major portion of the water with lime and soda ash, thus effecting maximum reduction of hardness and then neutralizing the excess chemicals with the remainder of the water. The returning of sludge and the use of coagulants aid sedimentation. In municipal plants, softening below 60 to 75 p.p.m. is seldom attempted.

Another difficulty encountered is the formation of carbonate deposits on the filter sand and in the distribution system following treatment. This is due to the fact that deposition of the carbonates is not compiete when the water leaves the sedimentation basin. The remedy is to apply carbon dioxide to the water just prior to filtration. This process is known as recarbonation. Thus, lime treatment consists of removing carbon dioxide so that the carbonates will precipitate, while recarbonation consists of adding carbon dioxide so that the residual carbonates will remain in solution. The carbon dioxide is usually generated by burning coke, oil or gas in a suitable apparatus.

Lime treatment, if carried far enough, in addition to its softening action is an effective means of sterilization. Several plants in Ohio where difficulties due to chlorophenol tastes are prevalent, are using this method instead of chlorination. Owing to its property of removing carbon dioxide, which is essential to plant life, lime is also an efficient algicide.

—Abstract of a paper by Rudolph E. Thompson, Assistant Chemist and Bacteriologist, Filtration Plant, Toronto, Ont., read before the Canadian Section of the American Water Works Association.

Safety First in the Water System

SAFETY first should be uppermost in the minds of water-works officials at this time of year. Fire-hydrants and tests of fire apparatus, the condition of the water-supply and pressure and the condition of watercourses and sewers should receive immediate attention. The same principle should be applied to the removal of waste and rubbish, and to the examination of chimneys, flues, stovepipes, depositories of ashes and the numerous other causes of fires which so frequently occur during the winter months. These matters are of interest not only to the municipal officials but to all citizens.

Albany, N. Y., Loses Third Typhoid Suit

THE city of Albany, N. Y., has lost its third damage suit brought as a result of a typhoid fever outbreak when an award of $3,600 was made to a mother for the death of her daughter from this disease, according to *Health News*, issued by the New York State Department of Health. At the trial it was brought out that high water in the Hudson River overflowed into the old Erie Canal bed, and polluted water was drawn into the aqueduct running from the filtration plant to the pumping-station. Subsequently, the aqueduct was drained and leaks found. Within a short time pumps have been installed at the filtration plant, so that hereafter a positive instead of a negative pressure will be maintained. A new cast iron pipe has been laid paralleling the old aqueduct, but at a higher level, and will be put into use within a short time.

Evidence was introduced at the trial to show that about a week elapsed between the time that the city was notified by the State Department of Health of the presence of colon bacilli in the water and the taking of effective steps to overcome the conditions.

The ponded trickling filter at Lackawanna, N.Y. before chlorination

Chlorination *Solves the Filter Flooding Problem at* Lackawanna!

A ponded sprinkling sewage filter! Efficiency and capacity reduced! Plant overloaded! Something must be done!

A Wallace & Tiernan Solution Feed Chlorinator was installed! Two hundred and fifty pounds of liquid chlorine a day was applied to each filter for five successive days!

The ponding stopped—the slimy sewage growths disappeared—the distribution system—the nozzels—the filter material, all clean as new—and the plant restored to full capacity! The total chlorine cost was less than $100.00!

Just one of the many uses of W&T apparatus and liquid chlorine in sewage treatment. One of our engineers is available to discuss all matters of chlorination with those interested.

After five days use of chlorine—as clean as new

Sprinkling nozzels in operation after cleaning—note evenes of distribution

"The only safe water is a sterlized water"

WALLACE & TIERNAN
COMPANY, INCORPORATED
Manufacturers of Chlorine Control Apparatus
NEWARK · NEW JERSEY

NEW YORK CHICAGO KNOXVILLE SAN FRANCISCO MINNEAPOLIS PITTSBURGH DALLAS KANSAS CITY
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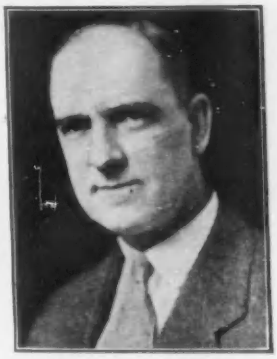
WALLACE & TIERNAN, LTD., TORONTO, CANADA WALLACE & TIERNAN, LTD., LONDON, ENGLAND

ALSO SEE OUR ADVERTISEMENT ON PAGE 12

CHARLES F. LINCK
Supt., Water Department,
Leavenworth, Kans.
(Appointed 1927)

WILLIAM S. PATTON
Mgr., Water Works,
Ashland, Ky.
(Appointed 1918)

HERVE CHAREST
Supt., Water Works,
Mobile, Ala.
(Appointed 1928)

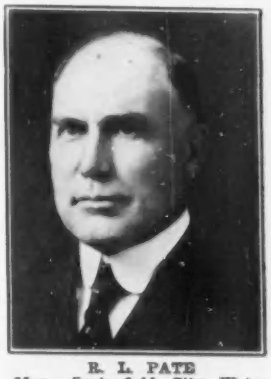


JOHN C. PRITCHARD
Dir., Public Utilities,
St. Louis, Mo.
(Appointed 1926)

ROBERT COLEMAN
Manager, Water Works,
Selma, Ala.
(Appointed 1918)

WHO'S WHO IN WATER SUPPLY

Installment No. 17—Portraits of Water-Works Officials of Fourteen Cities in Four States



R. L. PATE
Mgr., Springfield City Water
Co., Springfield, Mo.
(Appointed 1906)

BERNARD L. ULRICH
Supt., Water Works,
Manhattan, Kans.
(Appointed 1915)

CANNON WILLIAMS
Supt., Paris Water Works Co.,
Paris, Ky.
(Appointed 1928)

JAMES C. GORDON
Supt., Water Department,
Independence, Kans.
(Appointed 1911)

L. W. HELMREICH
Supt., Capital City Water Co.,
Jefferson City, Mo.
(Appointed 1926)

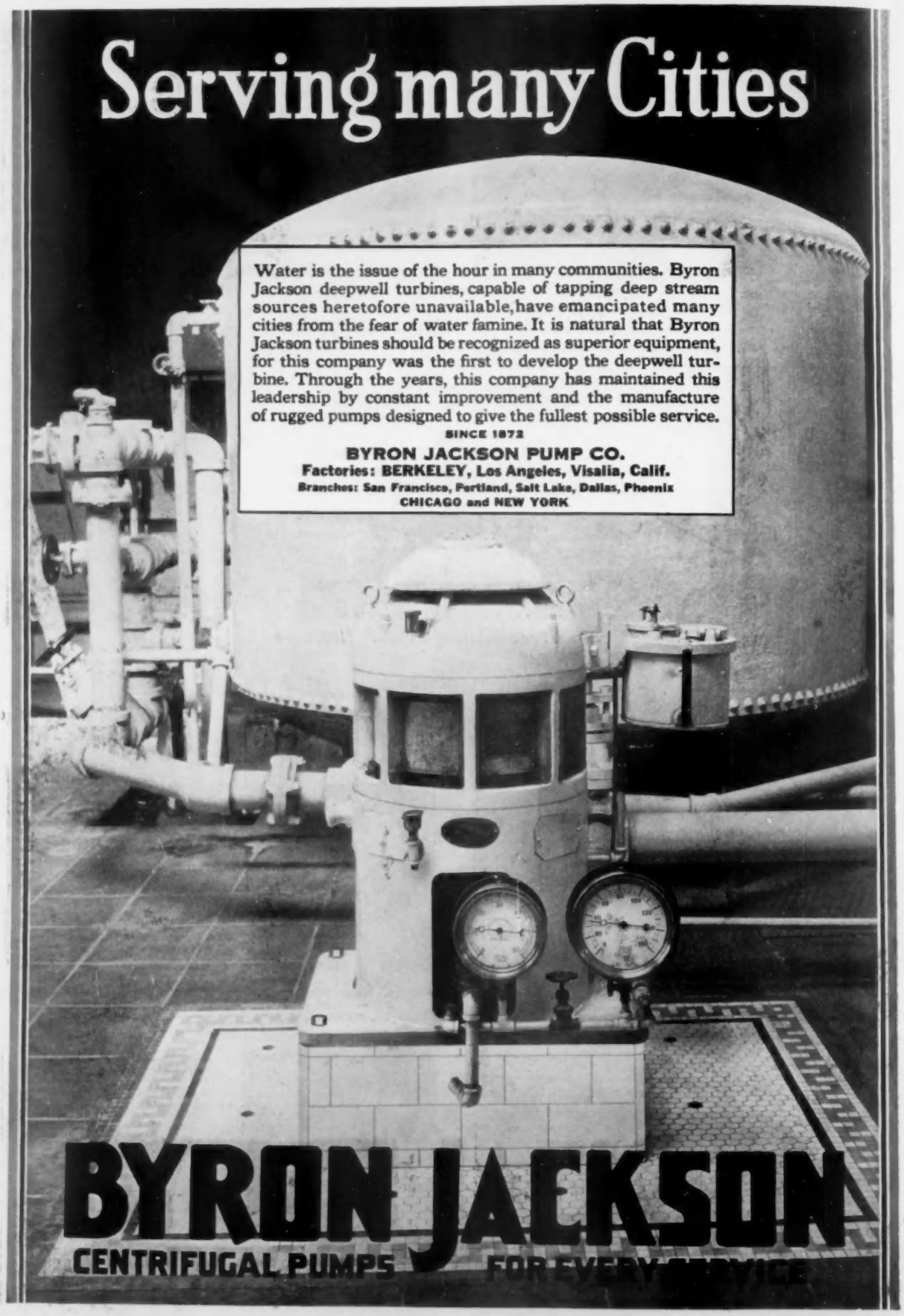
A. M. NIPPER
Supt., Water Works,
Hannibal, Mo.
(Appointed 1903)

FRANKLIN W. HOOVER
Supt., Water & Light Depts.,
Coffeyville, Kans.
(Appointed 1925)

SAMUEL J. DUNCAN
Supt., Water Works,
Moberley, Mo.
(Appointed 1922)

BEN R. DOUGHERTY
Supt., Richmond Water & Light
Co., Richmond, Ky.
(Appointed 1903)

Serving many Cities



Water is the issue of the hour in many communities. Byron Jackson deepwell turbines, capable of tapping deep stream sources heretofore unavailable, have emancipated many cities from the fear of water famine. It is natural that Byron Jackson turbines should be recognized as superior equipment, for this company was the first to develop the deepwell turbine. Through the years, this company has maintained this leadership by constant improvement and the manufacture of rugged pumps designed to give the fullest possible service.

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Items and Abstracts *for* ENGINEERING AND HIGHWAY DEPARTMENTS

Ultimate Widths of Highways

THE importance of establishing a wide right-of-way for streets in cities, small communities and rural highways, to provide for future transportation requirements, is self-evident. There are numerous instances today in which enormous sums of money are being spent to acquire the land and in many cases to buy abutting buildings to widen highways to provide for the traffic needs, due to failure to provide a sufficient width when the streets were planned.

This subject is being given serious consideration in many cities and small communities, and on state and county highway systems where legal provision is made for the ultimate width of the right-of-way for future transportation needs. Nevertheless, there are numerous instances where the planning is being done without making the necessary studies to obtain the facts upon which the decision must be based.

The determination of the ultimate width should be based upon an adequate width of sidewalk for all possible future needs. On through highways, provisions for parking space on both sides of the street and for at least two traffic lanes in either direction, one for slow and one for fast-moving vehicles, should constitute a minimum width in sections not built up and where the property can be acquired at a reasonable cost. Provision should also be made for additional width of paved highway at intersections. It would be a "penny wise and pound foolish" policy to economize in the width of either the sidewalk area or of the roadway in making provision for future highway needs.

This subject is a very live one now in all cities and smaller communities and in connection with state and county highway systems. There are many that contend that 100 feet should be a minimum width on state highways where it is feasible to obtain the land. The Regional Planning Commission of Philadelphia and the Tri-State District are contending that trunk line highways should be from 120 to 250 feet wide or greater. There are so many factors entering into the determination of the necessary width, such as the effect of parallel routes, separate commercial or truck highways, and by-pass routes around built-up communities, and factors affecting the origin and destination of highway routes and streets in built-up sections, that the final decision should be based upon consideration of all the facts in each instance, and then, to be safe, be liberal in fixing the width. There is evidence everywhere of lack of vision in fixing highway widths both for the rural highways and in built-up communities.

—From the report of the investigation of paving and general highway conditions by the Engineering Commission of the National Paving Brick Manufacturers Association.

Chile Pushing Road Construction

CHILE is pushing work on a 2,200-mile trunk motor road which, when completed, will link the nitrate districts of the northern boundary with the Straits of Magellan and form an important section of the Pan-American Highway. Six million dollars was spent on highways in 1928, and a five-year construction program is being initiated this year to make motoring possible throughout Chile.

Of the long north-south trunk, all except 200 miles is now officially "passable" with a motor car, but the northern parts will require much improvement before they will be an important factor in the country's communication. Part of the trunk and its feeders, however, are carrying so much traffic now that the Government is considering regulation to put motor freight on equal terms with the railroads.

An automobile road across the Andes to Argentine is still one of the greatest gaps in the system and the most difficult section to cross. Cars have crossed the Cordillera from Santiago to Buenos Aires, but there is not an open road there. Farther south, automobile traffic between the two counties is possible by several routes.

A New Method for Handling Asphalt Filler for Brick Paving

A BRICK pavement was recently completed in Flint, Mich., on North Saginaw Street, with a paved way 74 feet wide between curbs. The street is paved with an entire new brick surface for a portion of the distance and with new 27-foot strips outside the street-railway tracks space for the remainder. In all, it totals around 60,000 yards, according to H. C. McClure, City Engineer, Flint, Mich., who presented a paper describing it at the twenty-third annual meeting of the National Paving Brick Manufacturers Association. The specifications called for an asphalt joint filler to comply with the state highway specifications for this product.

Because of the location of the job, it was deemed advisable to eliminate as much interference on the street as possible and to reduce complaints and nuisances on the street. The item which was thought likely to cause the greatest objection was that of heating the filler in small street kettles. The suggestion was made to the contractor that, instead of getting filler in drums and using small street kettles and hand pouring methods as usually employed, he secure his asphalt in insulated tank cars, ship the cars directly to the engineering department siding, where plant steam would be available, and then use a distributor truck for applying the filler. This suggestion was adopted and it resulted in more than the usual degree of success.

The asphalt reached the plant siding at a temperature of 175 degrees Fahrenheit or above, and required only about four hours of plant steaming to make pumping into the distributor possible. The insulated distributor carried a jacketed pump, operated from a power take-off, which not only fills the tanks, but circulates or discharges the asphalt as well by means of a three-way valve control. The distributor also carries an air-compressor, a portable coal-oil torch flame, and two coal-oil burner nozzles for heating the asphalt in transit to the street or maintaing the asphalt at any desired temperature.

An ordinary fan-shaped nozzle was used for applying the asphalt direct to the street, the three-way valve being opened just a sufficient amount to give the desired quantity for the work at hand. Three men on the squeegees were all that were required for the street end of the work, the nozzle man and truck driver being furnished with the distributor outfit. When the brick surface was laid far enough in advance, it was possible to easily pour three full tanks of 700 gallons each in a single day and cover in excess of 2,000 square yards of surface. This pouring operation was so fast that the outfit was unable to operate for continued runs of full days, but was required to cut down to two tanks per day quite frequently.

Aside from the advantages to the workmen and to the residents, it is believed that the advantage to the job was without question a decided one. The material was maintained within a temperature range of less than 25 degrees, regardless of outside temperature and regardless of the amount of material in the tank, and it was absolutely uniform in every physical characteristic. By applying directly at the desired point and following immediately with the squeegee, an excessive amount was not left on the surface, yet all joints were completely filled.

During the progress of the job summer showers occurred, but these caused no inconvenience whatever, because the pouring operation could be stopped instantly and on occasions when the rain continued, the distributor was simply drawn back to the yard and the remaining portion in the tank pumped back into the tank car. With this extreme flexibility of operation, the pouring could be continued at various points along the job with only a few minutes' lost time in moving the truck ahead, and a half-hour's pouring in one portion of the work required no special set-up and could just as easily be taken care of as a fll day's pouring elsewhere.

It is believed that the work as outlined at the start proved to be unusually successful from the contractor's, the city's and the residents' viewpoint. There was no more expense in taking care of the work, and the absolute uniformity, flexibility and dependability of this portion of the job recommends itself very favorably for work of this character.

PART OF THE SHIPMENT OF W&T UNIVERSAL TYPE FLASHERS FURNISHED DAYTON, OHIO

DAYTON DECIDES

on W & T Universal Type Flashers

AFTER a searching investigation into the merits of various types of flashers for street and highway service, the experts at Dayton, Ohio, have selected the Wallace & Tiernan Universal Type Dry Battery Operated Flasher for fifteen safety zones in their city.

BECAUSE—

A Standard W&T Slow Flasher

W&T Flashers are reliable—when a lamp burns out another is automatically brought to the focal point. This unique feature is exclusive with W&T Flashers.

W&T Flashers have a low operating cost—six months' service on one set of batteries.

W&T Flashers are easy to maintain—self-contained unit using $1\frac{1}{2}$ Volt Standard Dry Batteries available anywhere.

W&T Flashers are rugged in design, yet attractive in appearance—C. I. base and shaft; wire re-inforced lenses; special weather resistant finishes; pleasing proportions.

W&T Flashers command attention—45 brilliant flashes each minute; lenses are free from fogging due to condensation.

W&T Thru Street Stop Flasher with Reflector Buttons

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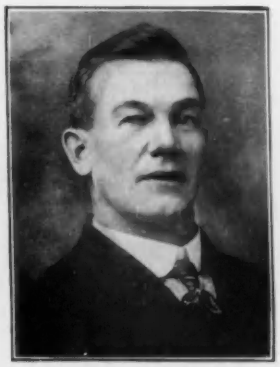
Fl-9

ALSO SEE OUR ADVERTISEMENT ON PAGE 8

WILLIAM J. DWYER
Supt. of Highways, Cortland Co., Cortland, N. Y.
(Appointed 1921)



HERBERT A. WILLIAMS
Supt. of Highways, Broome County, Binghamton, N. Y.
(Appointed 1919)

GEORGE C. DIEHL
County, Engr., Erie County, Buffalo, N. Y.
(Appointed 1898)

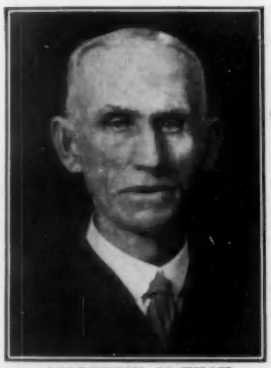
SQUIRE E. FITCH
Supt. of Highways, Chautauqua Co., Jamestown, N. Y.
(Appointed 1922)

MILFORD E. BINCKLEY
County Engr., Washington Co., Bartlesville, Okla.
(Appointed 1923)

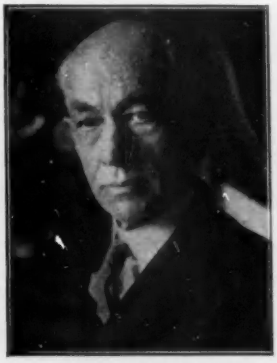
WHO'S WHO IN COUNTY ENGINEERING

County Engineers, Surveyors and Highway Superintendents of New York and Oklahoma

MAJOR T. B. MATTHEWS
County Engr., Carter County, Ardmore, Okla.
(Appointed 1926)



MATTHEW McEVOY
Supt. of Highways, Yates Co., Penn Yan, N. Y.
(Appointed 1909)



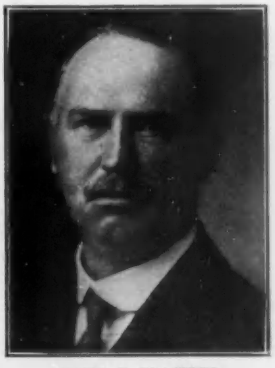
JOHN B. HODGMAN
Supt. of Highways, Saratoga Co., Ballston Spa., N. Y.
(Appointed 1909)

J. CHARLES DAYTON
Supt. of Highways, Cayuga Co., Auburn, N. Y.
(Appointed 1909)

HARRY G. POWELL
County Surveyor, Canadian Co., El Reno, Okla.
(Appointed 1915)

RAYMOND B. TRAVER
Supt. of Highways, Onondaga Co., Syracuse, N. Y.
(Appointed 1922)

ORSON C. RICHARDS
Supt. of Highways, Washington Co., Hudson Falls, N. Y.
(Appointed 1909)



FRED J. WAGNER
County Engr., Madison County, Wampsville, N. Y.
(Appointed 1919)

GEORGE W. KRIEGER, JR.
Supt. of Highways, Dutchess Co., Poughkeepsie, N. Y.
(Appointed 1921)

More Playgrounds —Fewer Accidents

KEEP the children off the streets –give them good playgrounds with plenty of fun-making, muscle-building, health-developing equipment—and yours will be a town where accidents involving children are few and far between.

For 21 years, Everwear Playground Apparatus has been recognized as the standard of quality. Built to withstand the abuse of after-hours roughnecks. Embodies every element of safety human ingenuity can devise. Playable as though the kids themselves had planned it.

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PLAYGROUND APPARATUS

Items and Abstracts *for* PARK AND PLAYGROUND DEPARTMENTS

Third National Playground Aircraft Tournament Opens

A PLAN to interest many more boys in building and flying model airplanes —and an effort to enlist girls also—was recently announced by The Playground and Recreation Association of America for the third national playground miniature aircraft tournament, which has already officially opened, and which will culminate in the national finals at Louisville, Ky., October 18 and 19.

The activity, conducted through city recreation departments, has been organized as a constructive pastime for the school vacation. Boys up to 21 are eligible to compete, those not sixteen at the end of next September as juniors, the others as seniors. Preliminary competitions to determine who are eligible for the finals will be held before September 10 under direction of local committees made up of the superintendent of recreation, the president of the local aeronautical society or airport, a representative of the chamber of commerce, the superintendent of schools, and others. The record of the leading point-winners in each local event will be submitted to the national committee, which will select the five highest point-winners in each event to compete for national honors. Silver cups and medals will be awarded to winners in the finals.

Seven outdoor and four indoor events for different types of planes are specified in the rules of the competition. Models launched by hand, rising off the ground, and rising off the water are called for. Many planes will be driven by rubber motors; others by springs, rockets, and compressed air. Last year 55 contestants qualified for the finals, during which several records were broken and a flight of 12½ minutes ending in the Atlantic was achieved by Tudor Morris, of Peru, Ind., with his rising-off-the-water model.

Orville Wright and Colonel Charles A. Lindbergh again head the tournament committee as chairman and associate chairman. Miss Amelia Earhart is a new member, whose particular interest is in girls' work. Full particulars are available from the Playground and Recreation Association, 315 Fourth Avenue, New York.

Gift to Chicago Will Bring the Heavens Down to Earth

"THE first great theater of the skies in America" is to be erected in Chicago in 1930. This "important link between the heavens and the earth," according to the Chicago Association of Commerce, is a gift to the city from Max Adler, one of her merchant princes, and is to cost $500,000. The Adler Planetarium, to be erected near Michigan Boulevard, will round out the advantages now embodied in the Chicago Art Institute, reputed to have a greater active membership than any other art center in the country, the famous Field Museum of Natural History, which played host to a million visitors in 1928, the Shedd Aquarium, nearing completion on the lake front of Grant Park, and the new home of the Civic Opera Company now arising on the east bank of the Chicago River in the very heart of the city.

"Fifteen German cities* now have planetaria," said the Association in congratulating Mr. Adler on this latest evidence of his civic responsibility. "Chicago will be the next great center to gaze into the starry universe beneath the canopy of a man-made sky and behold the whole firmanent blossoming into sparkling grandeur, with planets, sun, moon, and 4,500 stars enacting their orderly parts, producing a majestic drama which reduces centuries and years to months, and days and hours to seconds."

*See THE AMERICAN CITY, June, 1928, pages 102-103, for descriptions of the leading German planetaria.

Landscaping Airports and Public Grounds

"BRIEFLY, landscaping is the improved appearance of the land," L. Glenn Hall, Landscape Engineer, Los Angeles Park Department, told the recent convention of the American Institute of Park Executives. "Some of the chief elements in the landscape are ground, water, vegetation, the sky, structures, people, and animals. The first four of these elements usually dominate over the three latter in most parks. A flock of sheep browsing on the hillside of a large park might become one of the dominant features of the landscape. If structures, people or animals are to become the chief elements of the landscape in a city park, then the park shall be specially designed and the landscape modified for the major uses. If the landscape is subordinated too much, can we reasonably call the area a park? Does it not become a special type of public institution with its grounds ornamented? However, the park man is often called on to do the landscaping, whether it is a public zoo or aquarium, a library, city hall, or playground. Therefore, the principles of landscape parks may be extended to include the landscaping of various types of public grounds. The same principles will apply to different adaptations to all of these areas, which may be listed in concise manner as follows:

"1. The *park*, with the ground, vegetation, water and sky dominating

"2. The *playground*, with people and structures dominating

"3. The *zoo*, with animals and structures dominating

"4. *Public building grounds*, with the structures dominating

"5. *Public utilitarian open spaces*, as airports, with the ground and sky dominating"

In quoting from Mr. Hall's excellent discussion of the new responsibility of landscaping airports, THE AMERICAN CITY (March issue, page 15) inadvertently credited the paper to George W. Braden, Western Representative of the Playground and Recreation Association of America, who was also represented on the program and who also touched upon the subject of airport development.

More Than Twelve Million Acres of State and Community Forests

WITH 1,055,658 additional acres of forest land in the United States brought under state administration in the last three years, the total area of state forests now stands at 6,556,735 acres, according to reports to the Forest Service, United States Department of Agriculture.

Three years' growth in state park areas added a net area of 67,834 acres to the 1925 figures, bringing the total area of state parks to 436,077. Municipal and county forests and parks increased in total area from 697,447 acres at the end of 1925 to 726,577 acres at the beginning of this year.

The aggregate area of forest land owned by states, municipalities and counties in the United States on January 1, 1929, including other forest land beside that in forests and parks, was 12,136,945 acres.

The greatest extension in state forest area during the three-year period was reported by the state of Washington, which added 1,200,000 acres. Pennsylvania added 167,786 acres to its 1925 total, and Michigan was a close third with an increase of 167,000 acres. Three states,—Delaware, Georgia, and South Carolina,—which had no state forests three years ago, reported forest lands under state administration at the beginning of this year.

The Evolution of an Adequate Park System

AN excellent example of original planning for parks followed by continuous expansion is that of Great Falls, Mont. With an estimated population in 1925 of 27,000 the total area of the park system, exclusive of 37 miles of boulevards and driveways, is 686.4 acres. The selection of properties as to size and location has been admirable. There are 17 properties, exclusive of boulevards. These include 6 large parks of 48, 60, 81, 100, 100.8, and 240 acres, respectively, strategically distributed within and without the city limits; 5 neighborhood playfield parks comprising 5, 5, 8, 10 and 14 acres, respectively, and 6 neighborhood squares, 2½ acres each. A court-house square of 2½ acres adds a seventh to the list of neighborhood parks.

—U. S. Department of Labor, Bureau of Labor Statistics, Bulletin No. 462.

PROGRESSIVE COMMUNITIES

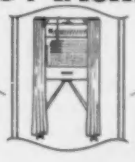
Everywhere are meeting the demand of the voting public for speed and accuracy on election day by use of the

VOTING MACHINE

In one state after another the old-fashioned paper ballot is being supplanted by the voting machine. More than 2,000 cities and towns are voting this modern mechanical way, saving time and money, avoiding spoiled ballots and providing returns immediately upon the close of the polls.

The cost of voting machines can be met out of savings which they permit. Write for descriptive booklet A-8.

AUTOMATIC VOTING MACHINE CORPORATION



JAMESTOWN NEW YORK

Shall Municipal Liability Be Placed on a More Uniform Basis?

AT page 105 of this issue appears an article by George W. Knox, Corporation Counsel for the city of Niagara Falls, N. Y., entitled "Liability of Cities and Villages in Maintaining Parks and Recreation Facilities," wherein the legal liability of municipalities with respect to their so-called municipal or private functions is contrasted with their non-liability when "governmental" functions are concerned; and the dangers that may attend the extension of the former group of activities are stressed.

There are three obvious ways of meeting the difficulty presented in the article. One is for the city to keep out of all possible activities that are adjudged to be private or municipal in character. This is directly in conflict with the well-established tendency for the city to provide increased services for its citizens, making for higher standards of living and a fuller life for the common man. Particularly as regards parks, it is well-nigh unthinkable that municipal activities should be stopped. A second method would be as strongly hinted by Mr. Knox in his final paragraph, to seek legislation declaring that such functions are of governmental character and do not admit of municipal liability. This effort, as suggested by a comment of A. L. H. Street, following the article, might prove a boomerang with the legislatures, not to mention the possibility of adverse court interpretations. The third way, which follows from a question raised by Mr. Street, would be for a recognition all around of the city's responsibility for the acts of its agents in performing authorized duties, irrespective of the rather fine-drawn distinction of governmental vs. municipal. This, of course, is a venturesome and highly debatable proposition, particularly in view of the time-honored tendency, frequently exhibited, of regarding the city as fair game for unprincipled claimants; and municipal officials are naturally not eager to interpose additional financial difficulties in the way of rendering the services in question.

But is it not possible that the whole subject could be clarified and made more rational by discussion and conferences between legislators and municipal representatives, with the latter ready to consider the elimination of the distinction as to the city's liability, if some effective way could be found to protect the city from excessive litigation over unjust claims, and from being subjected to exorbitant awards —perhaps by some such method of specifying amounts of compensation for specific injuries as enters into the application of workmen's compensation legislation? Might not a more wholesome public attitude come about, resulting in less unnecessary litigation, and less tendency to countenance efforts to mulct the city, while on the other hand, sufferers from negligence on the part of the city or its employees would be protected, and the city itself, by adequate use of liability insurance methods, could guard against the hazards that such a recognition of civic honor might involve?

Items and Abstracts *for* FINANCE AND LEGAL DEPARTMENTS

Chicago Adopts Excess Condemnation to Facilitate Public Improvements

THE voters of Chicago at a special election on February 26, approved a proposal submitted by the Council at a referendum, giving the city the power of excess condemnation, or the right to take private property, with adequate compensation, that is needed for the best treatment of a public improvement, such as a street widening, although not a part of the area actually to be used as the street or other improvement. The General Assembly of Illinois in 1927 had authorized the city to adopt this power by popular referendum. The majority in favor was 117,189.

The *National Real Estate Journal*, in commenting on this action, says,

"States in which excess condemnation is expressly permitted through a constitutional amendment are: Massachusetts, Ohio, Rhode Island, Wisconsin, New York, Michigan and California.

"In five additional states, according to a recent check of existing legislation on excess condemnation made by the National Association of Real Estate Boards, legislation providing for excess condemnation has now been enacted without a preliminary constitutional amendment expressly permitting it. These states are: Illinois, New Jersey, Virginia, Connecticut and Maryland.

"An approval on the part of Chicago voters of the excess condemnation measure was urged by the Chicago Plan Commission as a provision which will allow the city to consolidate and make way for the improvement of many small remnants of property fronting on widened streets. Heretofore the city could condemn only the exact space needed for the street. Often a strip of property was left in the hands of the owner who demanded an exorbitant price for it or left it unimproved.

"The law provides that the city, before taking the property, must prove in court that it 'is required to protect, preserve, or aid the improvement and is in reasonable quantity therefor.'"

The Municipal Bond Market

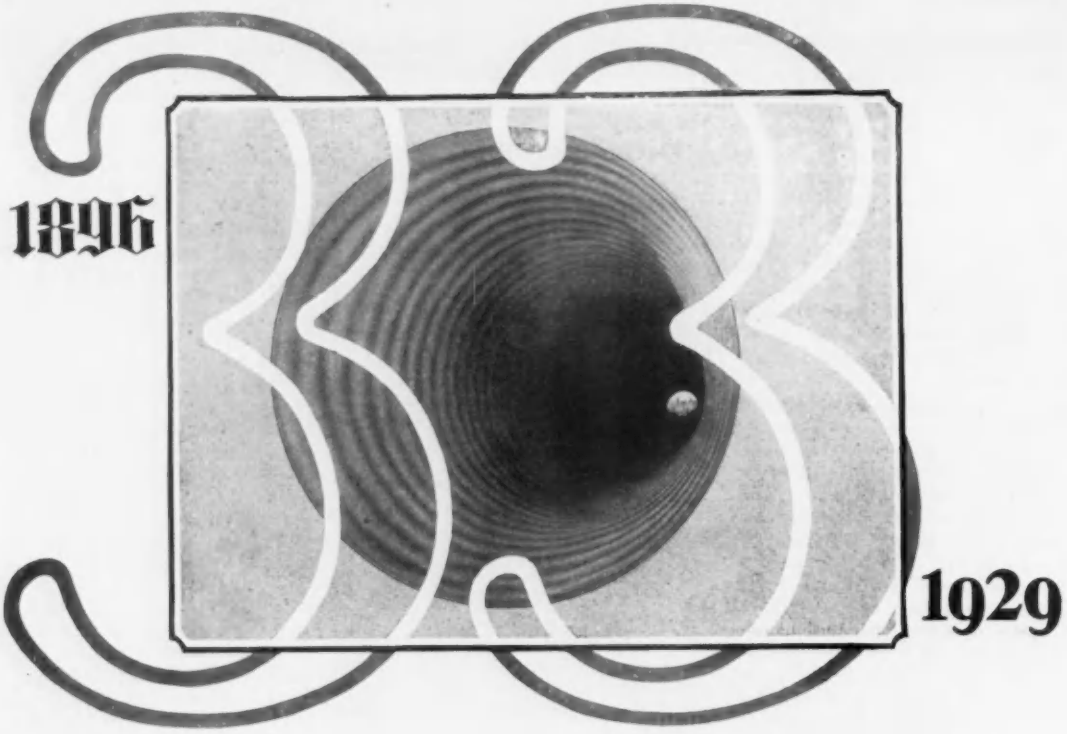
By SANDERS SHANKS, JR., EDITOR, *The Bond Buyer*

THE first two weeks of last month saw a definite improvement in the tone of the municipal bond market which, while not extreme, was in sharp contrast with the apathetic attitude prevailing during the past few months. The unusually quick retail distribution of a new issue of $1,606,558 Minneapolis, Minn., improvement bonds at prices to yield the purchaser from 4.25 per cent to 4.30 per cent was viewed by the dealers as especially encouraging. A month ago the average yield of high-grade bonds was in the neighborhood of 4.50 per cent. By the middle of April, the yield was .05 per cent to .10 per cent lower, with a marked scarcity of high-grade bonds the outstanding feature of the situation.

So far, the improved demand has not caused a flood of new financing. States and municipalities in the main have been able to curtail their long-term borrowing to an absolute minimum and they appear to be in no great hurry to sell bonds until a more pronounced improvement in prices occurs. This factor, coupled with a gradual abatement of speculative fever, should tend toward a better municipal market, but it will be a slow process.

The following list of representative issues indicates the present trend of the municipal bond market:

Amount	Issue	Rate (%)	Maturity	Basis
$2,800,000	Pittsburgh, Pa., Sch. Dist.	4¼	3-30-Yr. Ser.	4.21
850,000	Allentown, Pa., Sch. Dist.	4¼	19¼-Yr. Avg.	4.24
4,000,000	St. Louis, Mo.	4½	{1-20-Yr. Ser. / 12¼-Yr. Avg.}	4.37
7,500	Jefferson Co., Ind.	4½	5¾-Yr. Avg.	4.40
2,500,000	Nassau Co., N. Y.	4½	14-Yr. Avg.	4.41
2,000,000	California	4½	23⅝-Yr. Avg.	4.44
1,606,558	Minneapolis, Minn	4½	{10 5/6-Yr. Avg. / 23½-Yr. Avg.}	4.451
1,104,000	Elizabeth, N. J.	4½	15 5/6-Yr. Avg.	4.49
2,000,000	Chicago, Ill., Lincoln Park Dist.	4½	1-20-Yr. Ser.	4.61
500,000	Pontiac, Mich., Sch. Dist., Series C.	4½ & 4¾	{13 1/3-Yr. Avg. / 26 1/3-Yr. Avg.}	4.62
192,000	Gary, Ind.	4¾	24-Yr. Avg.	4.62
1,600,000	New Hampshire	4½	1-4-Yr. Ser.	4.75
200,000	Henry Co., Ia.	5	5-10½-Yr. Opt. Avg.	4.87
110,000	Hearne, Tex., Ind. Sch. Dist.	5	40-Yr.	4.89
280,000	Chickasaw Co., Ia.	5	5-10½-Yr. Opt. Avg.	4.93
2,623	West Linn, Ore., Imp. Dist.	6	1-10-Yr. Opt.	4.95
13,000	Rugby, N. D., Sch. Dist.	5	11-Yr. Avg.	4.95
675,000	Jackson, Miss.	5¼	15-Yr. Avg.	5.16
50,000	Aberdeen, Wash.	5	29-Yr.	5.17
100,000	Franklin Par., La., Sch. Dist., Ward No. 1	6	1-20-Yr. Ser.	5.97



33 years prove flexibility

twenty-three years prove pure iron

Armco Corrugated Pipe endures in drainage service

IN 1896 the first corrugated drains were put in service. Flexibility gave these black iron pipes their strength, pure iron gave them their durability. Today, after 33 years use, 85 per cent of them are still in service.

In 1906 Armco Ingot Iron (the purest iron made) was first produced—to improve the uniformity of these first veterans. Today, 23 years of actual service testify to the durability of Armco Ingot Iron in drainage service. There has been no change in the analysis—no change in design since the first Armco Corrugated Iron Pipe was produced in 1906—*that* is significant to the buyer who wishes preproved durability in drainage structures.

"Look under your roads"

The durability in drainage service of Armco Ingot Iron is clearly written under America's roads. You can read this message in every state and province. Armco engineers will gladly assist you in making an actual investigation in your territory.

Armco culverts and drains are manufactured from the Armco Ingot Iron of The American Rolling Mill Company and always bear its brand

ARMCO CULVERT MANUFACTURERS ASSOCIATION
MIDDLETOWN, OHIO

Member of the National Municipal League

ARMCO *corrugated* PIPE

© 1929, A. C. M. A.

"Look under your roads"

Items and Abstracts for CIVIC AND COMMERCIAL ORGANIZATIONS

Secretary Lamont Heads Safety Conference; Three New Committees Appointed

SECRETARY of Commerce Robert P. Lamont has agreed to serve as chairman of the National Conference on Street and Highway Safety, which was formed in 1924 by ten national associations to promote uniform traffic regulations and to devise means for reducing traffic hazards. The conference was created under the leadership of Herbert Hoover, as Secretary of Commerce, and he continued as its chairman until elected President.

Three new committees have also been established to carry forward the program of the Conference: a committee on protection of grade crossings and major highway intersections will undertake a survey of existing conditions; a study of proposed measures for the reduction of physical hazards; protection through standard signs, signals, markings and other means; public education and enforcement of uniform rules of the road, applying especially at grade crossings and major highway intersections.

A second committee is to deal with the maintenance of motor vehicles. Among the subjects that it will consider are statistics of accidents caused by equipment; essentials in maintenance; design to facilitate maintenance; periodic inspections; current maintenance; elimination of unsafe vehicles from the highways; education in relation to maintenance; and a plan to coordinate inspections with slack employment and production seasons.

The third committee, dealing with relief of traffic congestion, will have as its main functions a study of the general situation in that field, and the publication of information as to the progress made and the methods found most effective and advantageous.

Secretary Lamont was asked to head the Conference by the Executive Committee of the organization with William E. Metzger, of Detroit, as chairman. Other members of this committee are: Colonel A. B. Barber of the Chamber of Commerce of the United States and Director of the Conference; William Butterworth, President of the National Chamber; W. W. Cloud, President of the National Taxicab Owners' Association; J. M. Eaton of the American Mutual Alliance; Pyke Johnson and John C. Long of the National Automobile Chamber of Commerce; Dr. Julius H. Parmelee of the American Railway Association; Howard M. Starling of the American Automobile Association; Lucius S. Storrs of the American Electric Railway Association; A. W. Whitney of the National Bureau of Casualty and Surety Underwriters; and Sidney J. Williams of the National Safety Council. A. W. Koehler is secretary of the Conference, with headquarters at 1615 H Street, N. W., Washington, D. C.

Municipal and Civic Effort Combine for a Cleaner Philadelphia

"IF there is one thing in which Philadelphia citizens cooperate it is in throwing things into the streets," said Miss Frances A. Wister, President of the Philadelphia Civic Club, recently. But if humor, good-will and united municipal and civic endeavor can effect a reform, Philadelphia, now a city of "ruined appearance," is going to be changed. The most recent of many attacks upon the problem in which the Cleaner Philadelphia Committee of the Civic Club took important part, was an evening at Funfield Recreation Center for which the Bureau of Recreation, the Bureau of Street Cleaning, the Department of Public Safety, the Department of Health, and the above Committee were jointly responsible. Spendid local motion pictures, which have been developed by the Street Cleaning Bureau in cooperation with other local agencies, were shown, and, following an address by Mayor Mackey, an amusing pantomime called "The Street" was presented by children of the Center, who impersonated street cleaners, housewives, "The Street," "The Wind," "The Lamp Post," "The Tree." The production in two parts showed "The Right Way" and "The Wrong Way," and the cleverness of the children brought frequent laughter and applause from the large audience, in which an impressive number of city officials were represented. The police band played during intervals.

This occasion followed closely upon the launching of an educational enterprise in which the Civic Club has established a "model mile" on 22nd Street. The cooperation of 330 householders has been solicited, and even the first trash collection day following the intial visit of the club representatives marked a big improvement. Weekly visits are to be continued until the mile really becomes "model" in cleanliness.

"Know Your Own Community" Rally Held in New Jersey

ADDRESSES by high school students on phases of community life, and a special musical program by about 200 student musicians, featured the second annual "Know Your Own Community" rally sponsored by the Chamber of Commerce of the Oranges and Maplewood, N. J.

The program drew a capacity audience to the auditorium of the East Orange High School on the night of March 19. The High School orators discussed the following topics in relation to their home communities: "The Intellectual and Spiritual Life in the Oranges and Maplewood"; "Happy Home Life"; "Wholesome Social Life"; and "The Responsibility of the Citizen to the Community."

This community gathering was inaugurated two years ago at the instigation of Peter A. Smith, of South Orange, now a Village Trustee and then the President of the Chamber of Commerce of the five municipalities. It has proved so popular that it has become an established annual event.

Kansas City "Civics by Radio" Programs in Third Year

SCORES of thousands if not actually hundreds of thousands of people have listened in on the "Civics by Radio" programs which have been offered weekly by the Citizens' League of Kansas City, Mo., for more than two years, according to a statement issued by the League. These programs are broadcast through courtesy of the *Kansas City Star* (KDAF) station. Municipal finance; schools and citizenship; airports; park systems; pedestrians and the traffic; fire prevention; business women as citizens; smoke control; city water supplies; calendar reform; merit system in public employment; and public improvement programs are some of the subjects which have been featured. All of the addresses are given by well-known citizens, some of them of national reputation, and on subjects of public interest.

Beaumont and Kansas City to Join in a Good-Will Tour

THE luxurious steamship Shawnee will sail from the municipal docks of the Port of Beaumont, Texas, June 6, on a delightful cruise of two weeks among the Isles of Enchantment.

The personnel of the party will be leading business and professional men and their families, teachers, former soldiers of our foreign wars and others, selected by the Chambers of Commerce of Kansas City, Mo., and Beaumont, Texas.

The cruise is for good-will, trade, publicity, pleasure and education. Stops will be made at San Juan, Porto Rico; Port-au-Prince, Haiti; St. Thomas, Virgin Islands; and Santo Domingo City, Dominican Republic. These four ports of call have been carefully selected with reference to business opportunities, beautiful scenery, romantic historic settings and interesting peoples.

Among the prominent leaders of the cruise will be Governor and Mrs. Dan Moody of Texas; Hon. Dr. and Mrs. George C. Butte, former Attorney-General of Porto Rico, and others bearing the greetings of this country to the officials of the island dominions.

Applications for reservation are being accepted by the Chambers of Commerce of Kansas City and Beaumont. The tour is being conducted on a non-profit basis.

Of Particular Interest

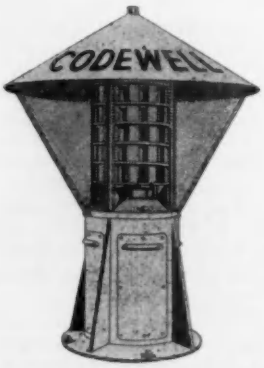
to executives of chambers of commerce and civic clubs are the articles to be found on pages 144, 145, 150, 151, 159, 164 and 165 of this issue.

GAMEWELL
1929 MODEL

PEERLESS TRANSMITTER

ANOTHER member of our 1929 line of models used for sending out box and telephone alarms to engine houses on automatic, semi-automatic, and manual systems. Among its features are: positive non-interfering and succession movement that looks in at every round, complying with N.F.P.A. recommendations—dial type of number set-up—locked dials to prevent interference following number set-up—special code signals can be sent preceding box numbers—greater speed in number set-up—all number dials restored by one operation—panel sloped at convenient angle—dead front panel protects operator—highly insulated throughout—handles 1 to 4 round inclusive—capacity of 24 complete rounds at one winding.

Descriptive Bulletins Sent Upon Request



1929 Model Codewell

Competitive tests have proved conclusively that the *Codewell* signal has greater carrying power than any other coding siren in the field. It also sounds *four* rounds of a signal while the next fastest siren is sounding only *one and one-half rounds.*

THE GAMEWELL COMPANY

Newton Upper Falls, Mass.

"A BOX A BLOCK"

New Regulations for Vehicles and Pedestrians at Signal-Controlled Intersection in New York State

UNDER the new Vehicle and Traffic Law, which became effective March 6, 1929, the following provisions apply to every city and first class village in the state of New York, except New York City, and repeal all conflicting local ordinances:

Section 2, subdivision 24. *Traffic control signals.* A traffic control signal shall mean a signalling device, either hand or electrically operated, in which different colors become alternately visible for fixed periods of time during which traffic shall comply with the meaning conveyed by the colors shown.

Section 84. *Meaning of colors.* Whenever traffic at any intersection is regulated by a traffic control signal, the following colors may be used and none other, and those colors herein authorized shall, when lighted, indicate as follows, except as provided in sections 85 and 86:

Red requires that all traffic shall stop and remain standing.

Green requires that traffic shall move.

Amber, when used, shall only warn traffic that the colors in the signal are about to change. No traffic shall enter an intersection controlled by a traffic control signal while the amber is lighted. Amber when used in precautionary signals without other colors, either fixed or flashing, shall mean proceed with caution.

Section 85. *Pedestrians' rights and duties at controlled intersections.* At intersections where traffic is controlled by traffic control signals, pedestrians shall cross the street only in the direction of moving traffic and operators of vehicles, when turning, shall yield the right of way to pedestrians when so crossing.

Section 86. *Turning at intersections.* At all intersections when traffic is controlled by traffic control signals, turns shall be made on the green light only, except as otherwise directed by a police officer, or where diagonal streets, short blocks or other unusual traffic conditions make a variation necessary, in which cases directions of traffic shall be clearly posted.

Detroit Wins Grand Prize in Fire-Waste Competition

DETROIT has been designated as the winner of the grand prize and also the winner among the Class 1 cities of over 500,000 population in the 1928 Inter-Chamber Fire Waste Contest. Erie, Pa., was awarded the prize for cities of the second class; Lakewood, Ohio, won among the cities of the third class; Owensboro, Ky., led the cities of the fourth class; and Albany, Ga., was victorious among cities of the fifth class.

The standing of the winners and the honor cities for the five classes, as announced by the Grading Committee of the National Fire Waste Council, is as follows:

GRAND WINNER—DETROIT, MICHIGAN

Class 1—Over 500,000 Population
WINNER—DETROIT, MICH.
HONOR CITIES

Philadelphia, Pa.	Cleveland, Ohio
Pittsburgh, Pa.	Buffalo, N. Y.
Milwaukee, Wis.	Baltimore, Md.
Los Angeles, Calif.	San Francisco, Calif.
Washington, D. C.	

Class 2—100,000-500,000 Population
WINNER—ERIE, PA.
HONOR CITIES

Cincinnati, Ohio	Utica, N. Y.
Portland, Ore.	Hartford, Conn.
Rochester, N. Y.	Long Beach, Calif.
Seattle, Wash.	New Orleans, La., and
El Paso, Texas	Akron, Ohio, tie
Grand Rapids, Mich.	

Class 3—50,000-100,000 Population
WINNER—LAKEWOOD, OHIO
HONOR CITIES

Lansing, Mich.	Greensboro, N. C.
Hammond, Ind.	Huntington, W. Va.
Fresno, Calif.	Chelsea, Mass.
Pasadena, Calif.	Bethlehem, Pa.
Columbia, S. C.	Portsmouth, Ohio

Class 4—20,000-50,000 Population
WINNER—OWENSBORO, KY.
HONOR CITIES

Durham, N. C.	Riverside, Calif.
Watertown, N. Y.	Baton Rouge, La.
Richmond, Calif.	Waterloo, Iowa
Asheville, N. C.	Norristown, Pa.
Fort Dodge, Iowa	Moline, Ill.
Butler, Pa.	

Class 5—Under 20,000 Population
WINNER—ALBANY, GA.
HONOR CITIES

Fremont, Mich.	Redondo Beach, Calif.
Perryton, Texas	Ardmore, Pa.
Pottstown, Pa.	Marietta, Ohio
Billings, Mont.	Weston, W. Va.
Logan, Utah	Norwich, N. Y.

Items and Abstracts *for* DEPARTMENTS *of* PUBLIC SAFETY

Chicago Follows Detroit in Equipping Police Cars with Radio Receiving Sets

ALL squad cars of the Detective Division of the Chicago Police Department are now equipped with radio receiving sets which will pick up immediately reports of major crimes broadcast from station WGN.

This innovation is in line with that made by Detroit where in 12 months, cruising police car crews equipped with radio apparatus are reported to have made 605 arrests, acting upon orders broadcast to them.

The Chicago system is being promulgated by the *Chicago Tribune* which is supplying the radio sets and which operates station WGN. The newspaper has installed a direct telephone from the Police Dispatch Section to its broadcasting station and, when necessary, will broadcast crime news by "cutting in" on regular programs.

To expedite the system, Police Commissioner William H. Russell has ordered the immediate transmission of such messages to the Dispatch Section by the district stations, from that section to WGN, and from the radio headquarters to the detective squads. Desk sergeants in the various districts have been instructed to obtain all available information concerning crimes committed and to telephone it immediately to the Dispatch Section.

Many of the arrests by the automobile crews equipped with radio in Detroit were made within 30 to 60 seconds after the orders had been broadcast. The average time for all such arrests was about 90 seconds, according to Police Sergeant Kenneth Cox, in charge of the Detroit Police Department Radio station. The cruising crews have reached murder scenes in time to catch the culprits, have captured hit-and-run drivers, apprehended racketeers, run down bandits and trapped burglars in the act of looting homes. Four times recently in a single week, burglars were captured in homes they were entering, Sergeant Cox reports.

Stolen property valued at $5,000 has been recovered by the radio-equipped police squads and 38 cars retrieved. The police radio station transmitted 9,216 messages to the squads during the 12-months period and of this number, 5,472 were orders to proceed to the scene of a crime.

Under recent orders of Police Commissioner W. P. Rutledge, 32 additional police cars will be equipped with radio receiving sets. With these additional cars and the transmission speed, it is estimated that it will be possible to have a radio-equipped car within a 30-second radius of virtually every crime reported in Detroit.

Seventy-eight Cities Report Increase of 413 Automobile Deaths During Twenty-Week Period

THE following table has been compiled from figures released by the Department of Commerce at four-week intervals, showing the number of deaths from automobile accidents reported by 78 large cities in the United States in four weeks ending:

Mar. 23, 1929	525	Mar. 24, 1928	421
Feb. 23, 1929	466	Feb. 25, 1928	504
Jan. 26, 1929	612	Jan. 28, 1928	531
Dec. 29, 1928	771	Dec. 31, 1927	624
Dec. 1, 1928	738	Dec. 3, 1927	619
Total for 20 weeks ending Mar. 23, 1929	3,112	Total for 20 weeks ending Mar. 24, 1928	2,699

Most of these deaths were the result of accidents which occurred within the corporate limits of the cities, although some of the accidents occurred outside of the city limits.

The totals show an increase of 413 in the number of deaths in the 78 cities from automobile accidents during the twenty-week period over the corresponding period of a year ago. This appalling increase of more than 15 per cent indicates the importance of continued vigilance in the enforcement of traffic regulations and in devising more efficient means of promoting street and highway safety throughout the United States.

Bonding Police Officers

SIXTEEN of the 60 cities in New York State require a bond or surety from their policemen and police officers. The amount of bond required varies from $500 to $5,000. No protection is given policemen or officers in return for such bond. Twenty-five cities give the services of their legal departments to policemen in the event of suit or judgment for false arrest.

RUBBER TRAFFIC MARKERS

IN DIRECT LINE OF VISION

6 DISTINCT ADVANTAGES

Safety
Visibility
Effectiveness

Dependability
Economy
Public Acceptance

Write for Prices

The STANDARD TRAFFIC MARKER COMPANY
WICHITA KANSAS

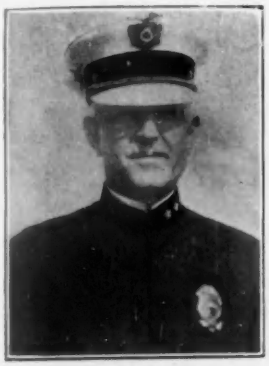
Mention THE AMERICAN CITY—it helps.

R. J. SCOTT
Fire Chief, Los Angeles, Calif.
(Appointed 1919)

WILLIAM G. LUTKEY
Fire Chief, Oakland, Calif.
(Appointed 1927)

DONALD L. MARSHALL
Police Chief, Oakland, Calif.
(Appointed 1927)

JAMES E. DAVIS
Police Chief, Los Angeles, Calif.
(Appointed 1926)



J. S. YANCY
Police Chief, Long Beach, Calif.
(Appointed 1922)

WHO'S WHO IN PUBLIC SAFETY

A Series of Portraits of Fire and Police Chiefs, Which Have Appeared Monthly Since the January, 1928, Issue

CHARLES PLUMMER
Fire Chief, San Jose, Calif.
(Appointed 1926)

AUGUST VOLLMER
Police Chief, Berkeley, Calif.
(Appointed 1905)

E. F. COOP
Fire Chief, Pasadena, Calif.
(Appoited 1919)

CHARLES H. KELLEY
Police Chief, Pasadena, Calif.
(Appointed 1921)

GEORGE HAGGERTY
Fire Chief, Berkeley, Calif.
(Appointed 1927)

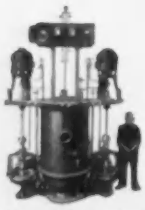
GEORGE C. SLOAN
Police Chief, Santa Barbara, Calif.
(Appointed 1928)

WILLIAM J. MOHR
Fire Chief, Santa Monica, Calif.
(Appointed 1926)

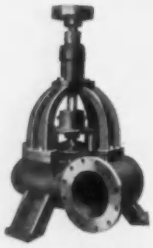
WILLIAM G WALKER
Police Chief, Fresno, Calif.
(Appointed 1925)

A. H. LANKFORD
Fire Chief, Glendale, Calif.
(Appointed 1915)

The Human Element Behind Yeomans Pumps

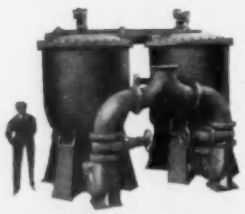


Form A Screenless Sewage Ejector

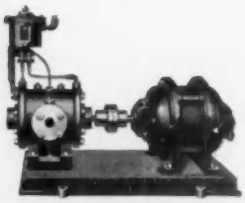


Non-Clogging Sewage Pump

Herman Winter 8 years
Henry Gehr 9 years
Arthur Hansen 9 years
Benson Barragan 10 years
John Thrum 11 years
Thomas McGinnis 11 years
John Teschke 12 years
John Anderson 12 years
Andrea Feo 12 years
Martin Johnson 13 years
Stephen Weiss 13 years
Ernest Beyer Asst. Foreman 13 years
Oscar Schwartz 16 years
Andrew Lawson 17 years
William Lamzus 17 years
John Collins 20 years
John Gray 18 years
August Ditthrenner Foreman 24 years in Yeomans Service
E. J. Codner Supt. 24 years



Shone Pneumatic Sewage Ejector



Rotary Direct-Connected Air-Compressor

Dependable Workers Dependable Work

PICTURED here are a few of the men employed in the Yeomans factory. Their long years of service have developed them into experienced, accurate workers who know how to build Yeomans pumps. Good pay, reasonable hours and the best of working conditions have been their incentives to remain with the company.

The design of any piece of machinery is important but is futile without good workmanship. It is obvious that the best laid out pump in the world, if built by floating, inexperienced or cheap labor must, of necessity, be an inferior product. Yeomans pumps are reliable because of the combination of high standard of design and of production by skilled workmen who know their jobs.

The average labor turnover in the Yeomans factory for the past five years has been only 3 7/10%.

Catalog on Request

YEOMANS BROTHERS COMPANY

1417 Dayton Street
Chicago

Estab. 1898

Yeomans Pumps

Sewage and Drainage

When you write for that catalog, kindly mention THE AMERICAN CITY.

Helpful Hints for City Officials

THE AMERICAN CITY should always be mentioned when writing for this material which is furnished free.

Keep your files up to date by checking over these items each month and writing for those you need.

EQUALIZING TAXES

City officials interested in a service which will lower taxes and tax rates, adjust equalization disputes, provide provable property values and reduce appeals, should secure Booklet A-106 of the Lloyd-Thomas Co. (Wallace W. True, Asst. Vice-Pres.), 4411 Ravenswood Ave., Chicago, Ill., which describes this company's scientific tax equalization service for cities.

ASPHALT PAVING TOOLS

This is the title of Bulletin No. 6 of the Barber Asphalt Co. (W. F. Hartzell, Adv. Mgr.), 1600 Arch St., Philadelhia, Pa., describing the Iroquis line of asphalt paving tools, including tampers and smoothers, sandals, rakes, hoes, cutters, shovels, scrapers, brooms, pouring, filling and melting pots, etc.

CAST IRON PIPE

The Cast Iron Pipe Research Assn. (Thomas F. Wolfe, Research Engr), 566 Peoples Gas Bldg., Chicago, Ill., offers to taxpayers, city officials and engineers information on every subject pertaining to the use of pipe for water, gas, sewers, road culverts, and for industrial needs.

PARK AND PLAYGROUND SETTEES

The Logan Co. (W. Hume Logan, Jr., Adv. Mgr.), 700 N. Buchanan, St., Louisville, Ky., will gladly send descriptions and price lists on Logan settees, which are made for hard usage, long life and real comfort in many styles and for every conceivable purpose.

SEALING SEWER PIPE JOINTS

The Standard Oil Co. of Indiana (N. H. Reed, Adv. Mgr.), 910 South Michigan Ave., Chicago, Ill., has issued a new folder describing No. 1 Korite and its use in making permanent tight joints in sewers to prevent leakage, infiltration and choking of pipe by roots.

PUMPS FOR DEWATERING

The Chain Belt Co. (R. A. Shilbauer, Adv. Mgr.), 767 Park St., Milwaukee, Wis., has issued a new folder describing Rex heavy-duty portable centrifugal pumps, which are designed for handling water containing mud, sand, and other foreign ingredients in such work as dewatering trenches or basements.

WATER PURIFICATION

Wm. B. Scaife & Sons Co. (A. M Scaife, Vice-Pres.), First National Bank Bldg., Pittsburgh, Pa., has issued a new Bulletin, No. 178, describing We-Fu-Go and Scaife water purification, filtration and softening systems for all purposes.

COLOR IN STREET LIGHTING

A new folder issued by the Reynolds Electric Co. (E. F. Stoker, Adv. Mgr.), 2679 W. Congress St., Chicago, Ill., describes Laco color hoods, which fit over the top of the lamp, and Laco color cylinders which enclose the lamp, for furnishing complete color lighting in connection with standard street posts and in either one or two color tones.

SLUICE-GATES

Information and prices on Rodney Hunt sluice-gates, butterfly, flap and mud valves and shear and filler gates, may be secured on request from the Rodney Hunt Machine Co. (C. C. Harris, Treas.), Orange, Mass.

WROUGHT-IRON FENCE

City officials interested in the fencing of public buildings, parks and playgrounds, should secure a copy of the catalog of the Stewart Iron Works Co., Inc. (W. S. Rich, Sec.), 216 Stewart Block, Cincinnati, Ohio, describing Stewart wrought-iron fence.

FENCES FOR PROTECTION

The new Page plan book, "Boundary Lines," tells how to provide positive safety and promote discipline in schools and playgrounds through the use of Page Copperweld fabric fencing, which requires no painting and gives lifetime service. Copies of this book may be secured on request from the Page Fence Assn., 211 N. Michigan Ave., Chicago, Ill.

MODERN HOUSE-NUMBERING METHODS

This is the title of a portfolio issued by Premax Products, Inc. (G. O. Benson, Vice-Pres.), Dept. AC3-29, Niagara Falls, N. Y., which shows the numbering systems of representative cities and explains the different methods of financing such numbering, the advantages of various types of numbers, and samples of Premax numbers.

MOTOR-DRIVEN HIGHWAY MOWERS

Information regarding the new Rawls high-speed, heavy-duty highway mower, which is towed by a truck or auto and operated by a gasoline engine, which greatly increases the speed and cutting power of the mower, will be gladly sent on request by the Rawls Mfg. Co. (S. E. Rawls, Gen. Mgr.), 202-10 Iowa Ave., Streator, Ill.

VISIBLE STREET SIGNS

The Standard Mfg. Co. (W. K. Voorhees, Pres.), Cedar Falls, Iowa, will be pleased to send a copy of its catalog showing its complete line of Aluminite permanent, readable street signs, and describing the company's engineering service in street marking.

BITUMINOUS PAVING

Complete information regarding Warrenite-Bitulithic pavement, which is used in cities all over the country and which has proved economical and durable, may be secured from Warren Bros. Co. (Earle W. Pimm, Mgr. Publicity Dept.), P. O. Box 1869, Boston, Mass.

LONG-LIVED WATER METERS

Full data regarding Federal water meters, which are made of the finest materials, and have large-capacity registers, stuffing box with lock, heavy gear train, ample measuring chambers, accuracy on all flows and frostproof or split cases, may be secured on request from the Federal Meter Corp (T. J. Halpin, Sec.), 545 N. Arlington Ave., East Orange, N. J.

SPRAYERS FOR CITY TREES

City officials interested in tree spraying should secure literature and prices from the Friend Mfg. Co. (Jno. C. Hall, Adv. Mgr.), Gasport, N. Y., manufacturers of Friend sprayers, which are made in four sizes and in portable, stationary types for mounting on trucks or tractors.

COMBINED ROLLER MOWERS

The catalog of the Gilson Mfg. Co. (A. R. Boerner, Sales Mgr.), 805 Park St., Port Washington, Wis., contains detailed descriptions of Bolens power mowers, which are made with or without riding cart, and in which the cutting unit is wider than the roller and will trim over the edges of beds, borders and walks with great saving of labor.

ASPHALT PAVING

Complete data and costs on the paving of city streets and highways with Texaco asphalt paving, may be secured without obligation from the Texas Co. (W. H. Kershaw, Mgr., Asphalt Sales Dept.), 17 Battery Pl., New York.

STEEL POSTS

Descriptive catalogs on Sweet's steel posts, which are rolled from the highest grade carbon steel, are easy to drive and self-contained, with pleasing appearance and high safety factor, for fencing around municipal grounds, parks and playgrounds, may be secured from the Sweet's Steel Co. (Chas. C. Steel, Gen. Mgr. of Sales), Williamsport, Pa.

GARBAGE COLLECTION BODIES

Literature on the Colecto covered refuse collection body which provides a clean, quick, economical method of handling the collection of garbage, refuse, dust, ashes and papers without nuisance or odor, may be secured from B. Nicoll & Co., Inc. (J. E. Doran, Sales Mgr.), 292 Madison Ave., New York.

STEEL TANKS FOR WATER-WORKS

Complete information regarding complete water-works systems, including pipe lines, reservoirs and filtration and purification plants built by the Pittsburgh-Des Moines Steel Co. (J. E. O'Leary, Gen. Sales Mgr.), 3 Neville Island, Pittsburgh, Pa., as well as a copy of its Municipal Booklet No. 1 describing Pittsburgh-Des Moines steel tanks for water-works, may be secured on request from this company.

PLAYGROUND APPARATUS

Catalogs and prices on the Junglegym, an entirely different and superior piece of playground apparatus which will keep many children safely amused for hours, may be secured from the Playground Equipment Co., Inc. (Thomas A. Lawton, Genl. Mgr.), 122 Greenwich St., New York.

REJUVENATING OLD HIGHWAYS

The Barrett Co., 40 Rector St., New York, has issued a new booklet, Form No. 37, on Tarvia Re-Tread for rejuvenating old highways, describing its use on new stone bases or over old macadam, gravel or rigid type pavements.

A MODERN AMBULANCE

A beautifully illustrated brochure showing and describing Henney ambulances in detail, including the Henney Ambulance Moderne, will be sent on request by the Henney Motor Co., Freeport, Ill.

METER MAINTENANCE COSTS

The Badger Meter Mfg. Co., 841—30th St. (C. W. Wright, Pres.), Milwaukee, Wis., will be pleased to send a copy of its detailed bulletin describing Badger water meters, in which easy access to all working parts and added sturdy construction make for low maintenance costs.

ROAD MAINTENANCE EQUIPMENT

The Special Bulletins of the Baker Mfg. Co. (L. A. Ginzel, Sec.), 503 Stanford Ave., Springfield, Ill., tell all about Baker truck and tractor snow-plows, Maney self-loading scrapers, automatic rotary scrapers, road maintainers, bulldozers and backfillers.

PORTABLE ASPHALT PLANTS

City officials interested in mechanically operated, self-propelled, oil-burner-equipped, rubber-tired portable asphalt plants for road maintenance and repair work, should secure the illustrated descriptive catalog of the Chausse Oil Burner Co. (W. McK. White, Pres.), 1227 W. Beardsley Ave., Elkhart, Ind.

DOWEL SLEEVES FOR ROADS

Complete information and samples of Cleveland dowel sleeves, made of heavy chip board and thoroughly waterproofed, in any length or diameter, may be secured from the Cleveland Container Co. (W. F. Walker, Pres.), 10630 Berea Road, Cleveland, Ohio.

FIRE-HYDRANTS

The catalog of the Darling Valve & Mfg. Co. (A. G. Smith, Sales Mgr.), Williamsport, Pa., describes Darling fire-hydrants and tells how they are easily inspected and lubricated through the top.

LOADERS FOR ROAD WORK

The Nelson K-2 loader, which is claimed to do the work of 20 shovelers at low cost, which requires no motive power and no hand shoveling, is built by the N. P. Nelson Iron Works, Inc. (F. W. James, Vice-Pres.), 822 Bloomfield Ave., Passaic, N. J., from which complete information and prices may be secured.

SEAGRAVE---
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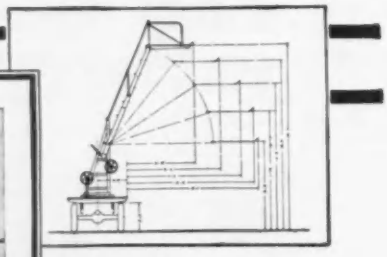

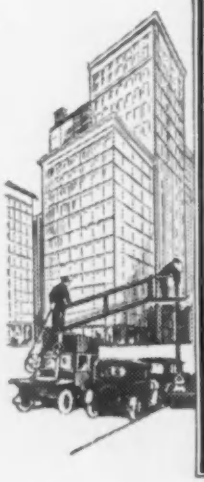

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The Seagrave Aerial Platform Ladder has been manufactured with such important factors as safety of working men, strength and simplicity of operation. It can easily be operated by one man and can be locked in position, which is a desirable safety factor. The Seagrave ladder has 8-inch steps—not rungs—to a 28 x 52-inch platform provided with guard rails. It weighs only 1000-pounds and can be mounted on any chassis. When not in operation it folds across the top of the cab, out of the way. Construction throughout is of seasoned white ash, reinforced with pressed steel channels.

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ALUMINUM PAINT FOR CITY WORK

This is the title of a booklet which will be of interest to city officials concerned in protection for such metal work as water-tanks, gas-holders, lamp-posts, letter-boxes, traffic signals, and bridges. A copy may be secured from the Aluminum Co. of America (C. C. Conner, Adv. Dept.), 2422 Oliver Bldg., Pittsburgh, Pa.

SUMP PUMPS

The American Well Works (H. W. Spillar, Sec.), Aurora, Ill., will be pleased to send complete information and prices on American Type MMD sump pumps, which employ a hollow-shaft motor in place of a solid-shaft motor, giving a simpler and more compact machine, and eliminate flexible coupling and thrust bearing.

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City officials interested in the best type of pavement for their streets and highways should write to the Asphalt Association (J. E. Pennybacker, Gen. Mgr.), 441 Lexington Ave., New York, for complete information on the use of asphalt as a surfacing material.

VEHICLE-ACTUATED TRAFFIC CONTROL

Electro-Matic traffic control systems which are operated by the vehicles themselves as they pass over sensitive devices in the pavement adjacent to the intersection and which are said to pass more cars through an intersection with greater safety than any other type of control, are made by the Automatic Signal Corp. (Eugene D. Stirlen, Pres.), New Haven, Conn., from which complete information may be secured.

TRAILERS FOR GARBAGE COLLECTION

Literature of special interest to officials in charge of garbage collection and disposal will be sent on request by the Highway Trailer Co. (H. W. Helms, Gen. Mgr.), Edgerton, Wis., manufacturers of Highway trailers for garbage collection.

TRUCKS AND TRACTORS

Full information about the use of McCormick-Deering industrial tractors and International motor trucks by municipalities may be secured on request from the International Harvester Co. of America (M. J. Swan, Adv. Mgr.), 606 S. Michigan Ave., Chicago, Ill.

VIBRATIONLESS COMPRESSORS

Catalog 383-F of the Sullivan Machinery Co. (S. B. King, Adv. Mgr.), 125 S. Michigan Ave., Chicago, Ill., describes in detail the Sullivan vibrationless compressor, which insures an unfailing air supply on any job.

MODERN STREET LIGHTING

The Graybar Electric Co. (H. N. Wood, Mgr., Street Lighting Section), Room 1501, Graybar Bldg., Lexington Ave. at 43rd St., New York, will gladly send to interested city officials expert impartial advice on street-lighting problems.

ZONE PAINT

A traffic paint which dries in six minutes with no pick-ups, tire smears or blocking of traffic, and which is oil- and water-proof and easy to apply, is described in literature of Hanline Bros., 23 S. Howard St., Baltimore, Md., describing Hanline Zone-paint.

LOW-PRICED STREET SIGNS

The Rochester Street Signal Co., 400 Ward Bldg., Rochester, N. Y., offers a four-way porcelain enamel sign in an aluminum holder ready to mount on a 2-inch post, at a very reasonable rate. Complete descriptions and information may be secured on request.

TRUCKS FOR EVERY PURPOSE

Dodge Bros. Corp. (Frank Sim, Adv. Mgr.), Detroit, Mich., will gladly send information on its complete line of trucks, busses and motor-coaches, which meet every need for municipal use.

ROAD GRADERS FOR HARD JOBS

A copy of the Stockland Road Grader Book, describing road graders on which three-point suspension and low center of gravity are important features, may be secured without obligation from Foote Bros. Gear & Machine Co. (E. A. Emmons, Sales Mgr.), 251 N. Curtis St., Chicago, Ill.

STREET FLUSHERS

A descriptive bulletin on Hvass flushers, which may also be used for street sprinkling, fire fighting, light oiling and tree spraying, may be secured on request from Chas. Hvass & Co., Inc., 508 E. 19th St., New York.

NEW TRAFFIC LINE MARKER

A new traffic line pavement marker which has no spray nozzles, pumps, valve nor hose, is described in an illustrated folder issued by the Newaygo Engineering Co. (C. R. Walcott, Treas.), Newaygo, Mich.

LEANING-WHEEL GRADERS

The Austin-Western Road Machinery Co. (H. F. Barrows, Adv. Mgr.), 400 N. Michigan Ave., Chicago, Ill., has issued a well-illustrated folder describing the new 1929 Model Austin Mammoth Senior leaning-wheel grader with telescopic axle and disc wheels.

TREES—SHRUBS—EVERGREENS

The Spring 1929 General Price List and Catalog No. 255 of Naperville Nurseries, Naperville, DuPage Co., Ill., listing this company's line of trees, shrubs, evergreens, vines, perennials and rock garden plants, is ready for distribution to interested city officials.

CAREFULLY INSPECTED HYDRANTS

The A. P. Smith Mfg. Co. (T. J. Halpin, Sec.), East Orange, N. J., will gladly send complete information and prices on O'Brien hydrants, which undergo a series of careful and minute inspections before shipment, are quickly and easily repaired when broken and have low frictional resistance to water flowing through them.

KEEP ROADS DUSTLESS

Booklet No. 1056 of the Solvay Sales Corp. (W. I. Galliher, Mgr., Special Products Section), 40 Rector St., New York, gives all the facts about the use of Solvay calcium chloride, the surface binding action of which prevents disintegration, which is the cause of dust.

EMERGENCY POWER UNITS

Complete information regarding the use of Sterling quick-starting gasoline engines for standby service when other power fails, may be secured on request from the Sterling Engine Co., Dept. C-11 (M. E. Mutchler, Gen. Sales Mgr.), Buffalo, N. Y.

PROTECTION FOR THE JOB

The Toledo Pressed Steel Co. (Lyman W. Close, Vice-Pres.), 12th and Woodruff Ave., Toledo, Ohio, will be pleased to send data on the new Toledo torch with the new Economy burner, which is dependable in all kinds of weather, is very economical in the use of fuel, and is never stolen.

PORTABLE ASPHALT PLANTS

Portable asphalt plants made in three units each to speed moving them, and in 400-, 1,000-, 1,600- and 2,200-yard capacities, are described in the literature of the F. D. Cummer & Son Co. (I. Freeman, Sec.), Cleveland, Ohio.

REINFORCED CONCRETE PIPE

Complete information regarding Newark precast reinforced concrete sewer pipe and sketches showing the type of joint furnished, may be secured on request from the Newark Concrete Pipe Co. (F. H. Sherrerd, Gen. Mgr.), 462 Broad St., Newark, N. J.

NEW TRAFFIC CONTROL UNIT

The new Type CD control made by the Essco Mfg. Co. (C. A. Ward, Sales Mgr.), 111 Harrison St., Peoria, Ill., will be of interest to cities considering the purchase of their first control, or present users who wish to replace old or antiquated controls with this unit, which will operate any type of signal or system.

DURABLE STREET SIGNS

The A. D. Joslin Mfg. Co., Manistee, Mich., will be pleased to send complete information regarding Joslin new street signs, which have letters of pure aluminum embossed on a background finished in Duco.

A NEW STEEL ARMORING FOR FLOORS

Floorgard, a new steel armoring for reinforcing concrete, asphalt and composition floor surfaces, which is a built-up continuous steel mat of a number of steel strips held together with small circular tie rods, is described in literature which may be secured from Blaw-Knox Co. (D. Clinton Grove, Adv. Mgr.), 667 Farmers Bank Bldg., Pittsburgh, Pa.

A NEW BELT FEEDER

The Barber-Greene Co. (James H. Gregory, Publicity Mgr.), Aurora, Ill., will be glad to send to any one interested complete information in regard to its new belt feeder, which may be used for unloading material transported in hopper-bottom cars without digging a pit under the railroad tracks and which may be driven by either an electric motor or a gasoline engine.

FIBER FOR STREET BROOMS

The Huntsville Fiber & Veneer Works (Frank H. Ford, Pres.), Huntsville, Ala., will gladly send a copy of its booklet, "The Story of Huntsville Hickory," and complete information regarding Huntsville hickory for street sweepers, which handles with ease the heaviest street refuse, stands up under the severest conditions and lasts longer in service.

OIL-BURNING TAR HEATERS

Pamphlet No. 15 on the new Honhorst oil-burning tar heater, as well as other literature describing all styles of Honhorst portable and stationary tar heaters in sizes from 25 to 200 gallons, may be secured on request from the Jos. Honhorst Co. (L. A. Hess, Adv. Mgr.), 1016 W. 6th St., Cincinnati, Ohio.

A NEW AND SMALLER CRAWLER TRACTOR

The Caterpillar Tractor Co., San Leandro, Calif., and Peoria, Ill., has announced the new Caterpillar Fifteen, which completes the Caterpillar line of small tractors, giving the contractor three sizes aimed to fill his needs for a track-type tractor. Full information may be secured from this company.

DOORS FOR AIRPLANE HANGARS

A special door for airplane hangars in which only limited space for operation of the door units is available, and which is adaptable to any kind of hangar construction, has been developed by the Truscon Steel Co. (Oscar W. Loew, Adv. Mgr.), Youngstown, Ohio, from whom complete information and prices may be secured.

CUTTING WATER-MAINS

The Ellis pipe cutter, which has six keen rotary cutting blades and is made in two sizes, is described in a circular which may be secured on request from the Ellis & Ford Mfg. Co. (Herman A. Sperlich, Pres.), 38 Piquette St., Detroit, Mich.

PLANTING GUIDE

Kelsey Nursery Service (F. W. Kelsey, Pres.), 50 Church St., New York, has issued its new Short Guide to the best varieties of evergreens, shade trees, shrubs, forestry seedlings, transplants, etc., with special quantity prices.

COMBATING EROSION

A 16-page booklet, "Paving the Culvert to Combat Erosion," has been issued by the Armco Culvert Mfrs. Assn. (Anton S. Rosing, Publicity Mgr.), Middletown, Ohio, showing the advantages of Armco paved invert culvert.

TRAFFIC SIGNALS

The Holophane Co. (Chas. Franck, V.-P.), 342 Madison Ave., New York, has issued a new catalog, Booklet No. 700, describing Traficons, which have been developed for stop and go signals to give the proper light distribution efficiently.

FIRE-SAFE ROLLING DOORS

The Kinnear Mfg. Co., 1290-1300 Field Ave., Columbus, Ohio, will be pleased to send complete information regarding the advantages of Kinnear rolling doors, which have an efficient safety device that automatically closes the strong steel fireproof doors in case of fire.

WELL-WATER SYSTEMS

Complete data and prices on well water systems for municipalities may be secured without obligation from Layne & Bowler, Inc. (L. D. Mickley, Adv. Mgr.), Memphis, Tenn.

CURING CONCRETE

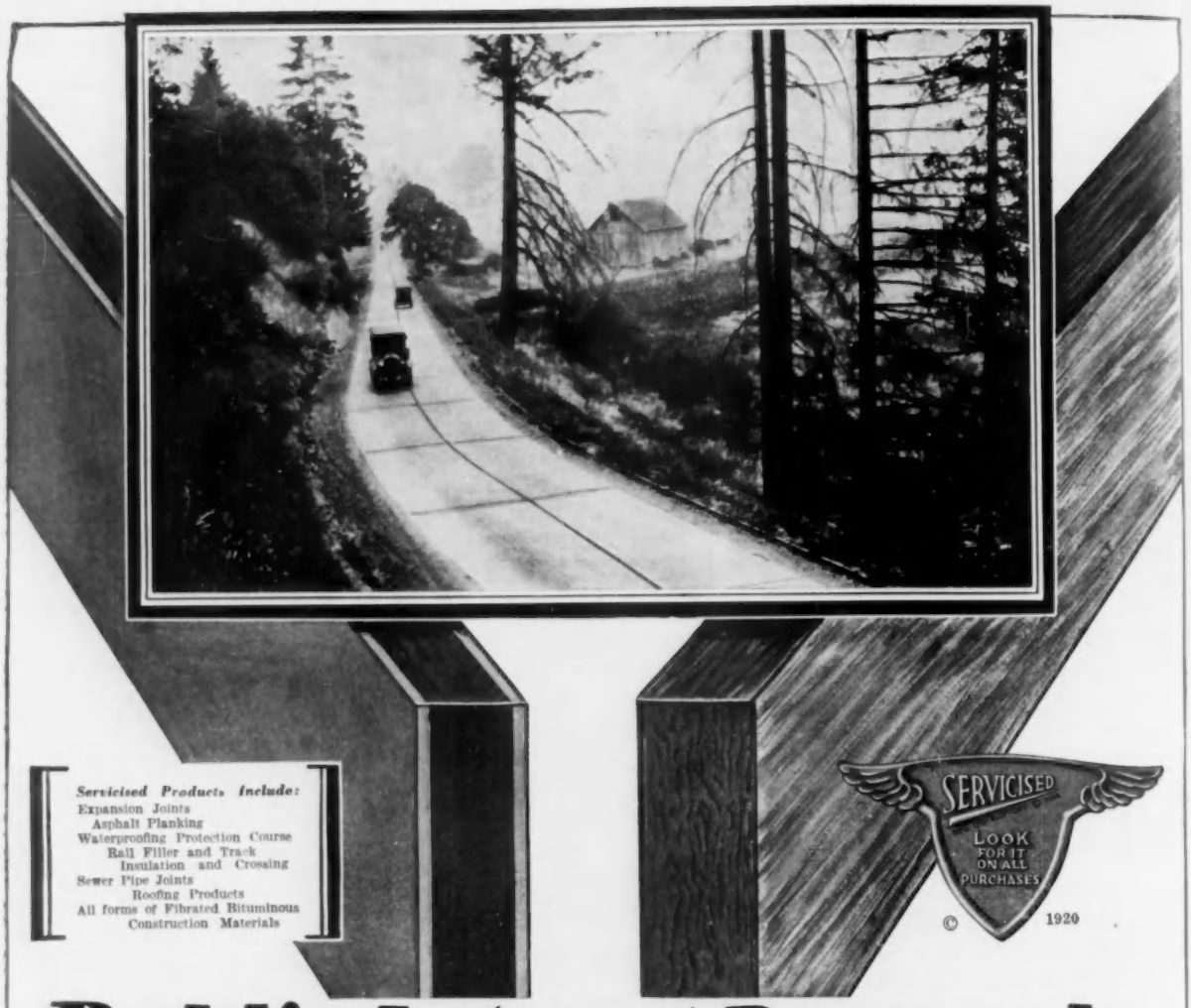
McEverlast, Inc. (A. M. Shenk, Pres.), Graybar Bldg., New York, will be pleased to send to city officials a copy of its new booklet, "Curing Concrete Without Dirt and Water by the Hunt Process."

STREET AND WARNING SIGNS

Municipal bonded signs for street, highways and roads in cities, towns, villages, and on borough and state highways and county roads, are described in Catalog 29 recently issued by the Municipal Street Sign Co. (A. Sprung, Gen. Mgr.), 287 Broadway, New York.

WIRE-MESH ROAD-GUARD

Complete information and engineering service regarding both highway protection and reinforcing will be furnished upon request to city officials interested in American Life Net Road Guard, made by the American Wire Fence Co. (C. A. Young, Mgr., Road Guard Dept.), Union Trust Bldg., Chicago, and described in its catalog, "Steps You Can Take to Protect Human Lives."



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MAY, 1929
Vol. XL, No. 5

The American City

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7. ***Plenty of parks, parkways, playgrounds, and swimming pools***
8. ***Administrative efficiency and citizenship aid in bringing these things to pass***

Municipal Traffic Engineers—Recent Developments in Their Appointment and Activities

By BURTON W. MARSH
TRAFFIC ENGINEER, CITY OF PITTSBURGH

SINCE employment of the first traffic engineers in Pittsburgh and Seattle in 1924, why have eleven large cities and one county established the position of traffic engineer? The answer lies in the growing realization of the need of a better-organized attack upon the perplexing and ever-growing problems of street traffic. The police have been doing their best to handle the situation—often with inadequate personnel—but they need help, for the problem has developed far beyond their proper functions of manual "dispatching" of traffic, of enforcement and of education. This is true not only in the great metropolitan centers, but in smaller cities and towns.

The Necessity of Traffic Planning

The problem now demands cooperative action on the part of many divisions of municipal government, and of the business structure of the community. Haphazard and piecemeal regulation will not suffice. The problem of how to secure the maximum efficiency in the use of the city's most valuable public property, its streets,—the problem of facilitation of traffic movement and reduction of accidents—demands intelligent, city-wide *traffic planning*. Such traffic planning work cannot succeed if it is based upon opinions—it must be based upon traffic counts, upon studies, upon comprehensive surveys of the many interrelated phases of the problem. Parking regulations should be based upon data as to traffic flow, mass transportation requirements, business needs, and upon other important factors. Traffic control signals should be located only where careful studies prove that they are warranted, and as far as possible major arteries and business districts should have carefully designed, flexible signal systems permitting progressive movement. "Through traffic" streets should not be scattered about haphazardly, but should be instituted and developed in accordance with a studied master plan for the entire city. "By-passing" and special routing of traffic call for careful and intelligent study.

Such studies demand competent direction. The training of the engineer makes him especially fitted for such work. Hence, the traffic engineer.

Survey of Municipal Traffic Engineering Work

Recently a survey was made of traffic engineering work in those communities known to have traffic engineers, and inquiries were also sent on this subject to all cities with a population of 100,000 or over. The purpose of the survey was to develop facts concerning the organization of the work, the major types of work being carried on, the main accomplishments in the different cities, and the most serious obstacles and handicaps being encountered. Some interesting facts were obtained, which are here presented in summarized form.

Traffic Engineering Growing

The accompanying table, which covers only a part of the study, shows the names of the cities and the county having full-time traffic engineers, with the dates of establishment of the position. Most of the positions were created within the last two years. It is significant that Detroit, after abolishing the position in 1927 for what are understood to have been political reasons, re-established the office in December, 1928. Buffalo, which employed a consultant as traffic engineer for the two years of 1925 and 1926, is said to have under Council consideration, the creation of the position in a permanent capacity. Essex County, New Jersey, which bears the distinction of being the first county in the country to establish the position, is listed with the cities. In Minneapolis, A. C. Godward, who until his recent resignation, was City Planning Engineer, also served as city traffic engineer, and was one of the country's outstanding leaders in the field. Mr. Godward stated that the major need in Minneapolis was for a separate and permanent traffic engineering bureau. Three other large cities are known to be giving serious consideration to the appointment of traffic engineers.

The step recently taken in Massachusetts is believed significant as regards appointment of state traffic engineers. A state law was enacted giving broad traffic powers to the state Department of Public Works. The Albert Russel Erskine Bureau for Street Traffic Research was engaged to make certain surveys and studies. Maxwell Halsey of the Bureau, as Traffic Engineer, is carrying on some important and interesting studies to secure substantial uniformity throughout the state as to

MUNICIPAL AND COUNTY TRAFFIC ENGINEERING DATA

City and Name of Present Traffic Engineer (listed according to date Traffic Engineer first appointed)	When was position of Traffic Engineer created?	If have Traffic Planning Bureau or Traffic Engineering Bureau when created?	(*a*) What is permanent personnel? How many engineering college graduates? (*b*) Temporary personnel?	What was 1928 budget? (All funds are from current revenue, unless noted otherwise)
Pittsburgh Burton W. Marsh	1924	1926	(*a*) 22 permanent, including two college graduates. (*b*) 13 temporary, including one college graduate	$134,100 — salaries, equipment, education. $125,000 — bond fund
Seattle J. W. A. Bollong	1924	1926	(*a*) 18 permanent, including two college graduates. (*b*) 8-10 temporary, during summer months	$57,430
Washington, D. C. M. O. Eldridge	Mar., 1925	Mar., 1925	(*a*) 15 permanent, including one college graduate (*b*) No temporary	$95,300—services and expenses $277,246—signals
Detroit H. M. Gould (consulting)	July, 1925*			
St. Louis Reyburn Hoffman	April, 1926	Operates as part of Dept. of Streets and Sewers	(*a*) 10 permanent, including one college graduate (*b*) 8 temporary	$45,000—signals, signs, equipment $18,580—personnel
Chicago Leslie J. Sorenson	Jan., 1927	1927	(*a*) 6 permanent (*b*) 20 temporary	$244,500 — personnel, signals, safety zones, erection and maintenance of signs
County of Essex, N. J. Hawley S. Simpson	July, 1927	Part of County Eng'r'ng Dept.	(*a*) 7 permanent, including one college graduate (*b*) 40-60 temporary about 3 days a year 10 laborers as needed	$30,000—current revenue $30,000—bond fund
San Francisco Geo. D. Burr	Oct., 1927	Oct., 1927	(*a*) 3 permanent, including two college graduates	$10,380—total budget, plus labor help equivalent to $1,500
Boston John F. Hurley	June, 1928	June, 1928	(*a*) 13 permanent (*b*) 1 temporary	$26,400 — permanent and temporary personnel and equipment $138,800—signals
Flint Oscar H. Gunderson	Nov., 1928		(*a*) 2 permanent, including one college graduate	
Providence Ralph W. Eaton	Dec., 1928‡	Operates under Public Service Eng'r's Dept.	(*a*) In Public Service Dept., 9 people used (*b*) Varies—has been as high as 45 on special studies	Not comparable
Minneapolis	†		(*a*) 4 permanent (*b*) 2 temporary and police as required	$10,000 — personnel, exclusive of police aid
Buffalo W. B. Powell	Consulting Engineer, Jan. 1925, to Dec., 1926	Council considering	One college graduate	$225,000 spent for signals *in past few years*

* Abolished, June, 1927; reestablished, December, 1928. † City Planning Engineer is also City Traffic Engineer. ‡ Public Service Engineer made ex-officio Traffic Engineer.

traffic signs, signals and markings, and to insure a system of through traffic streets and highways that will be properly coordinated with the state highway system. It is understood that consideration is being given to establishing a permanent traffic engineering division.

Traffic Engineering Bureaus Created

The need of a staff of workers under the traffic engineer has been recognized in most of the cities. Generally a traffic planning or traffic engineering bureau has been created. As the work has developed, it has been recognized that it must be carried on continuously, for the problem is ever growing and ever changing, and progressive cities have realized that they cannot afford to stand still in their traffic planning any more than a railroad can afford to stop improving its signaling, developing its terminals, maintaining up-to-date "traffic regulations," and improving its scheduling and its segregation of freight and passenger traffic movement.

Traffic Engineering Staffs

The accompanying table shows considerable differences in the number of workers. This may be partially explained by the size of the city, the seriousness of the traffic problem, and by the degree of development of the work. Another important factor is the scope of the work coming under the traffic engineer. In Pittsburgh, for example, where there is the largest permanent organization, the bureau, in addition to its planning work, has numerous operation and maintenance duties.

It has complete control of the purchase, installation, operation, and maintenance of all traffic control signals, flashing beacons, signs, safety zones, painting and insert-marker work. Its personnel also includes the full-time secretary of the traffic committee. In other cities, various of these functions are performed by the police, by the bureau of electricity, and other agencies. Several of the engineers cite insufficient trained assistants as one of their major handicaps. This fact is significant in indicating that once the traffic engineering work is under way, the problem is not in finding work to do, but there is great difficulty in giving proper engineering study and analysis to the large number of important problems assigned to the bureau.

Budgets for Traffic Engineering Work

Similarly, the 1928 budgets for this work, as shown in the tabulation, vary greatly. To a considerable extent, the reasons for these variances are the same as those cited just above. Furthermore, some cities have realized, more than others, the value of investing money in traffic improvements. Several of the engineers cited lack of funds as one of their major handicaps. The tabulation shows that a large proportion of the budgets is for traffic equipment, especially traffic control signals.

Cooperative Attitude of Police

Fortunately, as the replies indicate, the police are generally cooperative. In some cases, especially when the work was first started, officers resented what they considered to be intrusion on their work. As the traffic engineering work developed, however, this feeling usually disappeared. The police find that most of the traffic engineer's work is designing signal systems, making traffic studies and counts, and other work which they have not been doing and which requires different training and qualifications from those for which policemen are selected. At or about the time the position of traffic engineer is created, there is usually set up a traffic commission. The new activities result in a quickened public interest in the traffic problem. This is generally beneficial to police traffic work. In Pittsburgh, for instance, within a short time after the new work was inaugurated, there resulted an increase of 49 per cent in the traffic police force. Other recommendations are usually made to improve the organization and administration of the police traffic work. For instance, in Chicago, one recommendation was for bringing all traffic officers under one executive head. The training of the public by various educational methods tends to make the work of the traffic officers easier. The increased installation of traffic equipment is also helpful to their work. The police often find that in cooperation with the new agencies, they can secure long-desired improvements which, for one reason or another, they had not secured before. Not only do the traffic police find ample reasons for cooperation, but also the traffic engineer finds that the police officials in charge of traffic can be of great help to him with their intimate practical knowledge of many phases of the traffic problem.

Main Accomplishments

In answer to the question, *What do you consider the main accomplishments in your city since the traffic engineer has been on the job?*, some of the points mentioned are as follows:

1. Traffic accident analyses. Reduction of accidents. (In Washington, D. C., there were 91 persons killed in motor-vehicle traffic in 1924. Since that date there has been, with the exception of one year, a steady decrease to 73 in 1928. In Pitts-

burgh, there was a reduction in total street traffic fatalities from 176 in 1927 to 152 in 1928. The reduction in motor-vehicle fatalities was considerably greater. The reduction in child traffic fatalities has been steady, with the exception of one year, from 68 in 1924 to 24 in 1928—a reduction of nearly two-thirds. In San Francisco, total motor-vehicle fatalities were reduced from 156 in 1927 to 129 in 1928.)

2. Installation of effective traffic control signal systems.

3. Standardization of signs, signals, and markings. Improved administration of sign work. (Note:—The recently issued report of the American Engineering Council Committee on Street Traffic Signs, Signals, and Markings—copies available at headquarters, 26 Jackson Place, N. W., Washington, D. C.—now offers an almost ideal guide for cities, which will undoubtedly lead to substantial standardization on these matters throughout the country.)

4. Securing the creation of a traffic police bureau.

5. Establishment of warranted through traffic street systems.

6. Enactment of approved traffic ordinances. Improved administration of traffic ordinances.

7. Elimination of politics from all procedure. Elimination of practically all tag "fixing." (This broad statement was made by one of the leading traffic specialists in this country—and figures verify his statement.)

8. Yearly analyses of traffic conditions. Traffic surveys.

9. Establishment of permanent machinery to study traffic and install corrective measures.

10. Education of public in traffic matters.

11. Increased efficiency in use of streets.

These answers are further proof that scientific approach to the complicated traffic problems of cities, brings results.

Major Handicaps

In answer to the question, *What are your major handicaps and obstacles?*, some interesting replies were received. Among items noted are the following:

1. Political attitude toward traffic problem.
2. Lack of funds and trained assistants.
3. Too many minor complaints and requests which interfere with more important work.
4. Indifference on the part of the public. (Note:—The support of a strong and enlightened public opinion is perhaps the most important aid to success in traffic engineering work.)

Other Traffic Organizations

In cities having traffic engineers, other units of organization have been created to further traffic improvement work. These types of organization include:

1. An Official Traffic Commission
2. A Citizens Advisory Traffic Committee
3. A Police Traffic Division
4. A Traffic Court
5. A Traffic Violations Bureau

Not all of the cities listed in the table on page 86 have each of these types of organizations, however.

Cities not listed in the table, reporting one or more of the five types of organization as numbered above, are:

Baltimore, Md. (3, 4)
Columbus, Ohio (2, 3, 4)
Dayton, Ohio (3, 4)
Denver, Colo. (2)
El Paso, Tex. (2, 3)
Grand Rapids, Mich. (2, 5)
Hartford, Conn. (3)
Louisville, Ky. (2, 3, 5)
Lowell, Mass. (3)
New Haven, Conn. (1)
Newark, N. J. (2)
Syracuse, N. Y. (2)
Toledo, Ohio (2, 3, 4)

The values of these various units are discussed in available reports, notably several reports of the so-called Hoover Traffic Conferences and Committees, obtainable from the National Conference on Street and Highway Safety, Department of Commerce, Washington, D. C. To those who are especially interested in this subject, reference is directed to the report of the second Hoover Conference Committee on Metropolitan Traffic Facilities, to the report of the Hoover Committee on Municipal Traffic Ordinances and Regulations (which, in addition to the Model Traffic Ordinance, includes suggested ordinances to create an official traffic commission, and to create a division of traffic engineering), and to various publications of the National Safety Council on these subjects.

Conclusion

This paper indicates a growth of municipal traffic engineering work which it is reasonable to expect will increase rapidly, because of the fast-growing favor toward the scientific attack upon the traffic problem. The survey of municipal traffic engineering work indicates what has already been done by a number of progressive large cities and presents some detailed information concerning important phases of the work. Most important of all, it presents proof that the traffic engineers are securing results. It is believed that the merits of the idea commend it to municipalities throughout the country.

Secretary of War Scores Violators of Traffic and Liquor Laws

THAT law observance is more essential to the welfare of a nation than military prowess was pointed out by Secretary of War James W. Good, in an address at the opening of the annual D. A. R. convention in Washington, on April 15. A nation, said Secretary Good, might conceivably "recover from a defeat of arms and finally emerge from the conflict greater and nobler than before it was chastened. But for a nation to become wilfully, openly, and, as it were, proudly disdainful of law, is to invite an inglorious end to everything worth while in the life of the nation and of the individual."

Other significant quotations from this notable address by the new Secretary of War follow:

"The disrespect for law in the United States did not have its beginning with the adoption of any amendment to the Constitution of the United States. Before the latest of them had been brought forth and ratified, we had become the most lawless people upon the face of the earth. Single cities in the United States had more homicides and crimes of violence and brutality than many nations with more than half our entire population." . . .

"There is no statute nor constitutional provision which cannot be amended or repealed by the same process whereby it was enacted. To work for such amendment or repeal is the acknowledged right of every citizen, but to encourage disobedience of any law or of any part of the Constitution, to seek to make martyrs or heroes out of those who wilfully disobey them and to make tyrants out of those who seek to enforce them, is of the essence of disloyalty.

"Theoretically, at least, we all have an equal stake in the law, but some have more to protect than others. We all have life, and life is precious even to those who seem to have little to enjoy, little to live for.

"One set of laws designed primarily to protect life and property alike is our traffic regulations. How flagrantly and how generally we disregard them almost everywhere! In our complicated every-day life, one's wits are not enough, even though they be quick, not even in a small town or in the country, to prevent personal injury because of violation of traffic rules. The total of men and women and little children killed and maimed through wanton disregard of traffic regulations every year exceeds the sum total of the casualties of any great battle of the war, and we are becoming so hardened that we seem to take this as a matter of course.

"The Constitution and laws are not garments which the individual may put on and take off at will. The violation of the Eighteenth Constitutional Amendment, and the laws made to carry that amendment into force, would be impossible if the citizen observed the law. By his non-observance—aye, by his acquiesence in its violation—he aids in creating a disrespect for all law and weakens the very foundation upon which the Government rests. . . .

"History is replete with examples of law and order maintained without liberty, but none of liberty maintained without law and order."

How Detroit Has Improved the Sanitary Standards of Its Forty-Three Swimming Pools

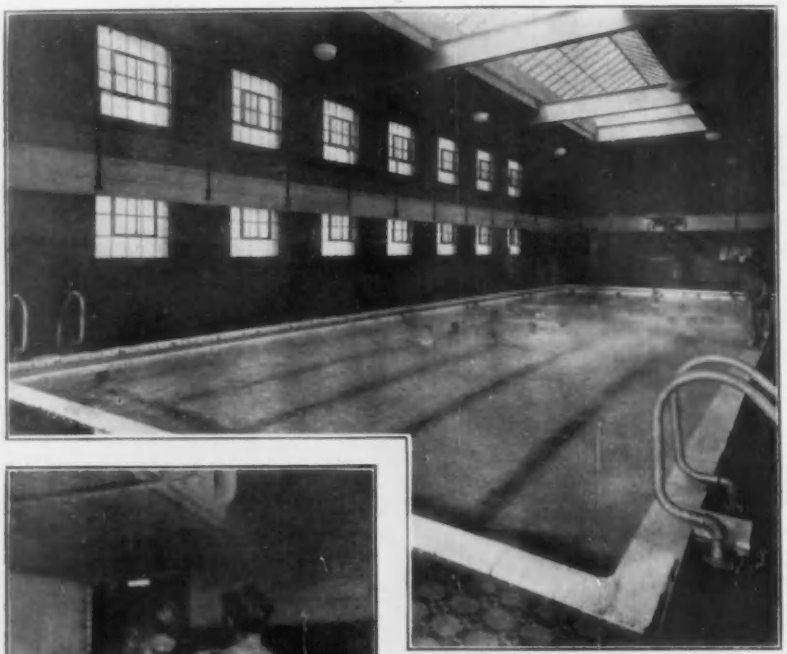
By WILLIAM H. CARY, JR.

ASSISTANT SANITARY ENGINEER, DEPARTMENT OF HEALTH, CITY OF DETROIT, MICH.

ABOUT twelve years ago the Detroit Department of Health started in a small way the study of swimming-pool hygiene. At that time only a few samples of the pool waters were collected at irregular intervals and there was no definite plan for reporting the results of the bacterial analyses or for regulating the swimming pools. Starting about November, 1922, routine sampling of the swimming-pool water was undertaken, and in November, 1923, a summarized report of the past year's samples was published. An attempt was made in this report to rate the pools, although no definite system had been established. This first report contained a list of twenty-one pools, all those in operation in Detroit at that time.

A second report was published in November, 1924, and covered the bacterial results of samples collected during the first ten months of that year. A more definite attempt was made to rate the pools in this report. These two reports were made in the *Weekly Health Review* and not as specific swimming-pool reports.

About this same time tentative bacterial standards were adopted and a definite system of reporting bacterial results was established. This system made possible the comparative rating and classification of the swimming pools. Following the usual practice in water analysis, the total count at 37° F. in 24 hours and the B. Coli determinations were used. The standards adopted were very lenient in the light of present-day ideas, but they served as a barrier which the pools could hurdle and which in fact have been used to date with apparently very good results.



HOW DETROIT OPERATES ITS SWIMMING POOLS

Fig. 1. A view of the St. Clair Community House swimming pool in use. The bathers are without suits, and the instructor is dressed to enter the water immediately in case of an emergency.

Fig. 2. Instructor inspecting a bather's feet for signs of ring worm or planta warts. All those not passing the sanitary test are barred from the pool

A "Weekly Health Review" and a Monthly "Swimming Pool Review"

The first report definitely devoted to swimming pools was published for the month of December, 1925. Since that time these reports have been published monthly, compiled reports being published in the *Weekly Health Review* for the quarters and the years. These first monthly reports were tabulated lists of the bacterial results, comparative standings, number of samples, bathing load, and type of treatment for each pool. Later it was found advisable to drop the column showing the type of treatment. In 1927 a new feature was added to the monthly reports. Starting in August of that year, a monthly *Swimming Pool Review* was established. In this review timely subjects on swimming pool control, management, and sanitation were discussed. Previously, these had been taken up in the quarterly and yearly reports, but now were taken up in detail, and an attempt was made to discuss them in a simple and interesting manner. There has always been an attempt to get a widespread circulation of all swimming-pool reports and to create an interest in them. Today we find supervisors, instructors, operators, and bathers looking forward to the next report; each in his own way planning to get a favored place for his pool.

What the Present Regulations Require

Other phases of the problem were developed along with this system of reporting, so it is necessary that we go back in our story to January, 1925, when the first regulations governing pools were adopted. In April, 1926, it became necessary to modify these regulations slightly, although for the most part they are the same today as when adopted. The regulations govern the supervision, instruction, operation, and use of the swimming pool and its appurtenances. Purposely, the bacterial standards were left out of the regulations because of their tentative nature. The regulations were published in quantity and distributed to all interested parties.

On account of their length, only a résumé of the regulations will be given here. A range of 72° to 78° F. was

allowed for the pool water, with the air temperature not to be less than three degrees warmer than the pool water and not to exceed 82° F. as a maximum. The supervision of the pools was placed in charge of the club managers, the school principals, the Board of Education, the Department of Recreation, and the Department of Health. The instructors are held responsible for the inspection and conduct of the bathers. The operators are held responsible for the condition of the pool and the maintenance of the equipment and appurtenances. Definite rules regulating showers, personal cleanliness and health of the bathers were made to cover the use of the pool. No attempt was made to govern the bathing load or the length of the swimming periods.

Placards bearing excerpts from the regulations were printed and posted in the locker rooms and on the pool bulletin boards. (See Figure 3.)

As an aid to efficient swimming-pool sanitation, operation records are kept on special forms furnished by the Department of Health. (See Figure 4.) Pool operators and instructors are invited to present their problems to this Department.

SWIMMERS ATTENTION

A WARM BATH WITH SOAP AND WITHOUT SUIT MUST BE TAKEN BEFORE ENTERING POOL.

WHEREVER SUITS ARE REQUIRED GRAY COTTON SUITS MUST BE WORN.

ALL BATHERS ARE SUBJECT TO INSPECTION BY DIRECTOR AND ATTENDANT IN CHARGE.

PERSONS AFFLICTED WITH COLDS, BOILS, SKIN ERUPTIONS, INFLAMED EYES, OR OTHER INFECTIONS WILL BE REFUSED ADMITTANCE TO THE POOL.

SPITTING OR OTHERWISE POLLUTING THE POOL WATER IS FORBIDDEN.

THE SWIMMING INSTRUCTOR SHALL BAR FROM THE POOL ANY PERSON NOT COMPLYING WITH THE REGULATIONS GOVERNING SWIMMING POOL SANITATION.

DETROIT DEPARTMENT OF HEALTH

FIG. 3. SAMPLE OF WARNING PLACARDS WHICH ARE POSTED IN LOCKER ROOMS AND ON POOL BULLETIN BOARDS

Teaching Fundamental Principles of Swimming Pool Sanitation and Operation

At meetings of the instructors and operators, the Department of Health has been able to do much in teaching fundamental principles of swimming-pool sanitation and operation. At first the instructors and operators were inclined to blame each other for the failure of their pools to meet the standard, but gradually they began to pull together and get bet-

SWIMMING POOL RECORD

POOL _____ DAILY REPORT WEEK ENDING _____ 192 ___

* Date	Sample Number	Time of Collection	Place of Collection: Bottom Deep End	Top Deep End	Bottom Shallow End	Top Shallow End	* Number Persons Using Pool: Male	Female	* Total Number Hours Filtration	* Total No. Hours Treatment Equipm't Operated	* Amount Disinfectant Used	Excess Free Chlorine	Temp. of Room	Temp. of Water	Count	Colon	* No. of inches of fresh water added daily	* Date of Complete Empty-ing	* Date of Complete Cleaning	* Filters Washed	* Lamps Cleaned	INSTRUCTIONS BY DEPT. OF HEALTH INSPECTOR
Total																						
Average																						

COMPARATIVE STANDING WEEK ENDING _____ 192 ____

Note—Relative standing is determined on the basis of the purity of pool water and suitability for bathing purposes.

* Columns to be filled in by supervisor.

* Supervisor of Equipment. Name _____ Title _____ Hours _____

* Supervisor of Bathing-Days-Name _____ Title _____ Hours _____

* Supervisor of Bathing-Nights-Name _____ Title _____ Hours _____

REMARKS

Count			
	1		
	2		
	3		
	4		
	5		
	6		
	7		
			Total
			Average

___% show presence of colon.

___% show presence of colon in excess of 10 per 100 c. c.

FIG. 4. SPECIAL FORM FURNISHED BY THE DEPARTMENT OF HEALTH FOR TABULATING OPERATION RECORDS

ter results. Classes for lay instructors, such as Scout leaders and Red Cross water safety instructors, were organized and their interest in the problem was stimulated. Recently an attempt has been made to organize classes in bathing sanitation to which everybody is welcome. Five lectures of thirty minutes each are given, an inspection trip to see the treatment equipment of a swimming pool is made, and an original thesis is required to complete the course. Cards designating an understanding of the subject are presented to each successful candidate by the Commissioner of the Department of Health.

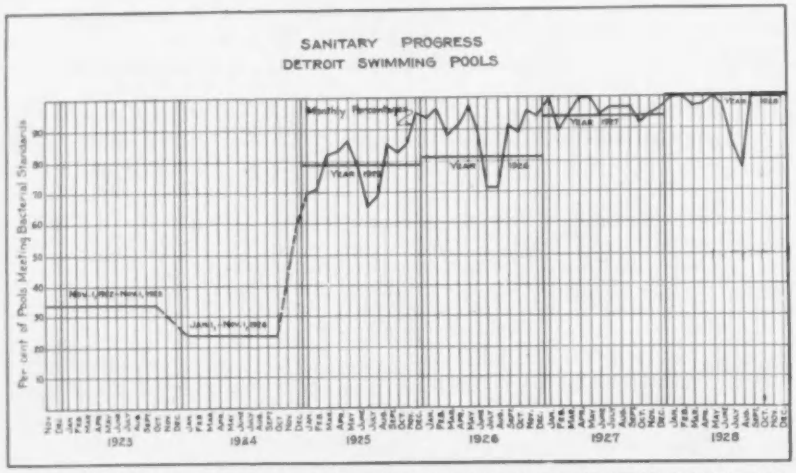


FIG. 5. CHART SHOWING IMPROVEMENT IN THE SANITARY CONDITION OF DETROIT SWIMMING POOLS SINCE 1922

From the twenty-one pools in 1923 the growth to the present has been rapid. There are now forty-three pools in Detroit, with a yearly total of over two million registrations. This increase in the number of pools and the careful observation of their operation revealed the need of supervised construction methods. In October, 1928, a new plumbing code became effective, and under a provision of that code the Department of Health was given the authority to pass upon all future alterations and construction of swimming pools. At the present time there are twelve new pools under construction in Detroit, of which the Department of Health has had supervision of the plans of six. It is hoped that certain common defects in swimming-pool construction can be eliminated by means of this preliminary supervision.

The supervision of the swimming pools in the Department of Health is under the Bureau of Sanitary Engineering. An assistant engineer and three inspectors devote a major portion of their time to this work. Medical assistance is given by the School Health Division, and the samples are analyzed in the Department's Laboratory.

Weekly noon luncheons are held by division heads of the Department of Health, Board of Education, and Department of Recreation, interested in health education. These meetings have been a source of much information, and aid greatly in keeping up the cooperative spirit which is so necessary to efficient results.

Figures Which Tell the Story

All these factors have been instrumental in raising the standards of Detroit's pools. The accompanying diagram shows the improvement in the sanitary condition of the city's pools since 1922. The percentages are based upon the number of pools complying with the local bacterial standards, as compared to the number reported. (See Figure 5.)

An analysis of the individual sample reports for the four years likewise shows this improved condition. The following table shows the results for the years indicated:

Year	Total Number Samples	% Samples with Zero Bacterial Count	% Samples with Bacterial Count 1,000 or less	% Samples No B. Coli Organisms
1925	4,555	27.0	82.2	82.9
1926	3,829	39.6	86.2	90.5
1927	3,752	57.3	90.2	93.9
1928	4,246	63.5	94.7	97.0

Other figures might be given, but enough has already been shown to indicate the progress that has been made.

In conclusion, let us see what general lessons can be drawn from this study:

Four Lessons Learned

1.—A system of reporting, rating, and classifying pools must be established. This will put them on a competitive basis, and the mere meeting of the standards will not satisfy; there will be a general attempt to get to the top of the list.

2.—Definite regulations must be established and adhered to, despite the occasional hardship they may incur. A widespread distribution of these regulations is very desirable.

3.—The educational field in swimming-pool sanitation includes not only the supervisors, instructors and operators but that much larger group, the bathers.

4.—The control of future construction is absolutely necessary to reduce the defects in our present pools.

With all of this, let us not forget that the pools are built for the bathers and it is the duty of sanitarians to see that they are safe and attractive.

Little Falls, N. Y., Water Protection Forestry Is Proving a Splendid Investment

FINANCIAL returns realizable from city forests are a feature of municipal economy worthy of somewhat more attention than they have yet received, according to the experience of Little Falls, N. Y. This city of 14,000 population now owns over 4,000 acres of land at the headwaters of two neighboring streams, Spruce Creek and Beaver Creek, which it holds for the protection of its water-supply. Timber being cut from this acreage will reimburse the city for the purchase and planting of the land, without impairing the value of the forest.

As far back as 1896, Little Falls was purchasing lands with the view of ultimately controlling the watersheds of the two creeks, says a recent U. S. Department of Agriculture report on the subject, which adds that up to 1927, 1,200 acres of mature timber was in a very nearly virgin forest of spruce, balsam, fir, hemlock, yellow birch, maple, and beech. In 1927, logging was begun on 5,000,000 board feet of soft wood and hard wood timber, as indicated in advance by a forester. When the work is completed this spring it will leave the forest unimpaired as a protective preserve.

The timber was sold to a concern specializing in high-grade lumber for piano sounding-boards under a contract similar to contracts under which the Forest Service of the Department of Agriculture sells national forest stumpage. Rapid regeneration is ensured by young reproduction already on the ground, and by seeding, and in order to increase the spruce growth, all skidding and hauling roads will be planted with seedling trees during this spring. The present planting program calls for the planting of 150,000 to 250,000 trees each spring until the still unplanted abandoned farm lands of the tract are all reforested. About 1,100 acres of immature timber will be ready for recutting after about twenty or thirty years.

Study Your Public, Mr. City Engineer

The Business Leader, the Least Successful Worker, the Average Citizen and the Community Organization Are All Elements to Be Considered in Building Up Desirable Public Relations of Understanding and Good-Will

By P. L. BROCKWAY
CITY ENGINEER, WICHITA, KAN.

THE city engineer should always strive to see each situation from the viewpoint of the other person. After all, there are not so many broad classifications and viewpoints. The preliminary steps of most arguments can be learned and, if met in time, they can often be led into any desired conclusion.

Probably the most difficulty person of all to handle is the one who has made an outstanding success in his own business, who has the faculty of selecting and developing leaders in gaining that success, who has been lorded and flattered by subordinates and hangers-on of all kinds, who is the honored guest at public affairs, who is sought for directorates for all kinds of enterprises until he unconsciously has absorbed the idea that his judgment is infallible. It is often necessary to gain the support of such a person. Ideas must be adroitly advanced in indirect ways so that he imagines he thinks of them himself. If, as often happens, the project being carried to successful conclusion, he openly takes credit for the whole scheme, join the crowd in congratulations.

It must also be remembered that the man at the other extreme of the social scale is equally the city engineer's employer and client. The least successful man, if hard-working and honest, should always be given the greatest consideration. He is apt to have one of two general reactions. Either he is somewhat overrawed by your standing—there is something rather awe-inspiring in the casual way he sees you handle your transit or the way you obtain obedience from the foreman who holds his job in his hands; or else he covers it up with the often assumed bravado that he is just as good as anybody and resents any attitude of superiority.

Serving Individual and Community

Nothing can help the engineer so much as to have people generally say, "Why, he's not a bit stuck up. He treated me perfectly square, showed me just why it couldn't be done, and I guess it's all right."

There is no reason why the desires of the individual should not be met, except that of some detrimental result to the public at large. It is worth taking considerable trouble to explain a refusal in words of one syllable so far as engineering is concerned.

It is worth while for the engineer to be a mixer. It is good for the personal growth he gets, as well as the better understanding of the viewpoint of the other folks. He should take an active part in church work if he believes in the teachings of the church.

He should, by all means, belong to a good civic organization and always be ready to do anything he can to help it along. In fact, he should rather get in front of the jobs that seem to be developing, so that some may attach themselves to him, and then there should be great diligence maintained in completing them. If music is his hobby, he should be a director in the musical organization; if flowers, he should help promote a flower show. If someone expresses wonder at such divertissement, it is worth much to have a friend who will defend him by saying, "Oh, yes, he's an engineer, but he's human."

His official attitude and that of his entire department must be the same as that of the commercial world which is expressed in such slogans as "Yours for service," "We strive to please," or "The customer is always right."

Of course, there are boresome repeaters who must be politely disposed of by such expedients as previous engagements, putting on your hat and walking him out of the building, or other relatively inoffensive devices.

The Irate Citizen

Then there is the occasional irate and abusive citizen. Each one is in a class by himself. One thing is essential. The engineer must not lose his own temper. If he does, the scene only becomes unpleasant and leaves unpleasant results. Besides, he is more apt to lose his own side of the argument. He must develop an official hide like an elephant, utterly impervious to venomous attacks against his official acts and even against his personal integrity. An unbiased explanation of the situation is due even to the most unreasonable client. Such an explanation will usually start him all over again, so it should be made only once. Sooner or later the abusive person will make so absurd a statement that he can be picked up on it and will lose his steam. One very common statement in such cases is the accusation that the engineer is actuated by personal spite. The obvious retort is sarcasm—"Yes, I have nothing else to do but hunt up folks of whom I have never heard in order to do something hateful to them." That usually settles it. In such a case the less said the better. If the engineer does not know enough of the question to definitely answer on the spot, promise an immediate investigation. If he does answer and stands on his former decision, the client is often relieved of his venom simply by having had his say, and later becomes ashamed of himself and may even offer an apology.

A Large Clientele

The municipal engineer is in a peculiar position with respect to his clientele. He is obligated in every way to give his best attention, skill and advice to each and every one of the thousands of whom his municipality is composed. At the same time, there is not one improvement in a hundred on which that portion of his clients who are immediately affected will agree. Among a dozen people, seven may finally agree on one thing, two or three may want something else, and the remainder violently want nothing at all.

It is equally true that it is impossible for the untrained person to visualize an improvement from plans or descriptions or even from described modifications of existing structures. If the engineer will hark back in his own memory to his own experience with descriptive geometry, he may be able to understand why anything less than a photograph is a closed book to the average person. It is for this reason that architects make such liberal use of tinted perspectives, even to the green lawn and shrubbery and a car discharging guests under the porte cochère

P. L. B.

Some Enemies Are Worth-While

If worst comes to worst, the engineer may have to acquire an enemy. In fact, if he does not have a few enemies in the course of years, it may be safely assumed that he lacks the force of character necessary to be the leader he should. He can indeed point to some of his enemies with pride.

There are in every community a few public pests, sour-minded folks who are so mentally and temperamentally constituted that they literally cannot conceive of anyone actuated by any other than selfish motives. Such people must be innately crooked; they are so positive that all public officers, in fact any one connected with public improvements or any other governmental function in any way, is a grafter. The only reasonable way to get at their viewpoint is to assume that they see the world through the distorted lenses of their own characters. After all, such people do have their use in the body politic. They are a fairly efficient check against unwitting carelessness on the part of the engineer. He is stimulated to prove every step of his program in advance if he knows that it will be attacked by every trick and device known to man.

Publicity

The municipal engineer naturally cannot use department store methods in advertising contemplated improvements. Neither is it a good thing to be constantly quoted or mentioned in the public press as if he were running for office. On the other hand, there is no reason for his hiding his light under a bushel. Short interviews on the works and plans of the department are always welcome to the reporters. They are human beings making a legitimate living, and a reasonable amount of help to them will generate a reciprocal kindly feeling. Besides that, it is the public's business and the public is entitled to know the high spots, at least, and it is the business of the newspapers to furnish news.

There are in the game reporters of such discretion and integrity that the engineer can take them into fullest confidence in all his plans, hopes and aims concerning the public's business. Such a reporter is a friend among friends. All he asks is protection of the story until it reaches a news stage. Then he can write understandingly and interestingly.

If at all possible, cultivate the friendship of newspapers. They are your only contact with the unseen thousands of your clients. Any reporter worthy of the name will not overdo the matter. If you obtain any honors outside your own city, let the world know it. Every line of business does it. That adds to civic pride. Cities are like families. They may not get along very well together at home, but they are all equally proud if any one brings a prize home from some other family.

Another legitimate source of publicity is the writing of technical and semi-technical articles for publication. Glance through any published collection of replies to questionnaires on current practice in any phase of municipal engineering. Some of the engineers in the smallest cities have perhaps the closest contact with details and develop some of the cleverest ideas. Publishers are always on the lookout for such things. There is quite a thrill to the receipt of the first card, "Your article is accepted."

Assuming that, like most of us in school, you were impatient of English, you came to study engineering and your thoughts do not readily flow into print, write anyway; even though no editor accepts your offerings, it is astonishing the way you will be helped in crystallizing and classifying your ideas. You will be enabled to think consecutively and helped to express yourself concisely.

Public Addresses

This brings you to another phase of legitimate contact with the public, namely, public talks to various organizations about the particular part of the public's business for which you are responsible. Preliminary writing is a wonderful aid, even if it consists of writing out the discussions in full. The talk, however, should never be read. Very few readers of manuscripts escape a droning, singsong tone of voice. Listening to the reading of papers at any technical convention will prove this. In speaking from notes the speaker can immediately go to another thought without noticeable breaks. It should be the aim to entirely dispense with notes except statistics, which are more convincing if read. They should never be given except in round numbers. It is distracting to hear a speaker quote millions and thousands and 39 cents.

If a series of statistics is to be discussed, curves or graphs on a suitable scale so as to be easily legible are a wonderful aid in getting the idea across. As one engineer puts it, if he wishes to emphasize a cat, he can describe it, its color, breed, size, weight, voice and the hours he returns home. Most of the audience will get it. Then on a chart he writes C-A-T in big box-car letters. More of the hearers understand. Then he draws a picture of a cat and they all comprehend perfectly. The engineer, above all men, should understand the preparation of graphs and curves to illustrate his ideas. A most remarkable demonstration occurred a few years ago when an engineer met a hostile audience with a few colored charts graphically illustrating the idea behind a project and in fifteen minutes simply explained the construction of the charts, which cleared the point so well that not a dozen questions were asked.

Finally, the picture of the cat suggests aerial photographs as the simplest and surest way of visualizing any project to the public.

The Construction and Operation of Public Works

So far this discussion has concerned itself almost exclusively with the engineer's contact with the public in the preliminary or educational stages of public improvement. His contact does not stop with that. There remains the construction period and, after that, the operation period, in which his judgment is vindicated or condemned. Because the operation period is the longest of all, and because its success or failure is the most important of all, to both the engineer and the public he serves, all of the other planning and construction stages must have it always in mind. It is just as imperative to the engineer as to any business on earth that he have satisfied customers.

Details of plans and specifications are, of course, something that public does not understand. They should be developed, however, with the thought always in mind that the engineer is reaching down into the public pocketbook and spending the other man's money, sometimes against his own wish. The return for the money spent should therefore be the most satisfactory possible, since the original owners have practically none of the fun of spending it.

During the construction period any project is a forlorn-looking prospect—dirt and confusion, disorder and inconvenience. The best that can be done is to plan the construction stages so as to minimize the inconvenience and insist on reasonable diligence on the part of the contractor. There are so many points of contact with the public during this period. All of his subordinates and all of the contractor's organization are making friends or enemies for the engineer. It is his duty to insist on courtesy at all times, as little inconvenience as possible, and proper safeguards for the safety of the public and protection of the partly completed work.

Successful Construction Its Own Reward

The successful completion and operation of an improvement for which an engineer works and plans for years is in some respects the greatest reward that can come to him. People may not generally know it, but he regards these improvements as his monument, whether or not his name is on them. As one man said, standing by a swimming pool,

filled with happy, splashing bathers on a hot day, "I get a wonderful kick out of knowing that I helped make these people happy." Probably not one in a dozen knew or would have cared that the quiet, unassuming onlooker made their sport possible. But occasionally, or more strictly speaking, semi-occasionally, a citizen more thoughtful than the rest gives him a word of cheer and congratulation, so he is encouraged to start another plan which he knows must be in operation five years hence, realizing that even though nine out of ten oppose at the start, not one in a hundred would be willing to go without the completed project after they can fully visualize it.

—Abstract of a chapter on "The Municipal Engineer—His Preparation, Probation and Personal Problems," a portion of a forthcoming volume on municipal engineering by Mr. Brockway.

Monroe Spends $700,000 on Water-Works Improvements

By M. P. HATCHER

OFFICE ENGINEER, BURNS & MCDONNELL ENGINEERING COMPANY

THE city of Monroe, La., has just completed a major portion of a water-works improvement program involving the ultimate expenditure of approximately $700,000. The portion of the work completed includes a six-million-gallon-per-day filtration and pumping-plant costing $270,000, and improvements to the distribution system costing $205,000. The uncompleted portion of the program includes a dam and low-service pumping-station for the improvement of the supply, and meters on consumers' services.

The main source of water-supply was and will continue to be the Ouachita River, a sizable stream having its source in the northern part of Arkansas and passing along the west limits of the city of Monroe. This stream furnishes an adequate supply of water generally low in turbidity, comparatively high in color and carrying at times of low flow a salt content as high as 2,500 parts per million due to pollution from the oil fields of Arkansas.

Oil-Field Pollution Overcome

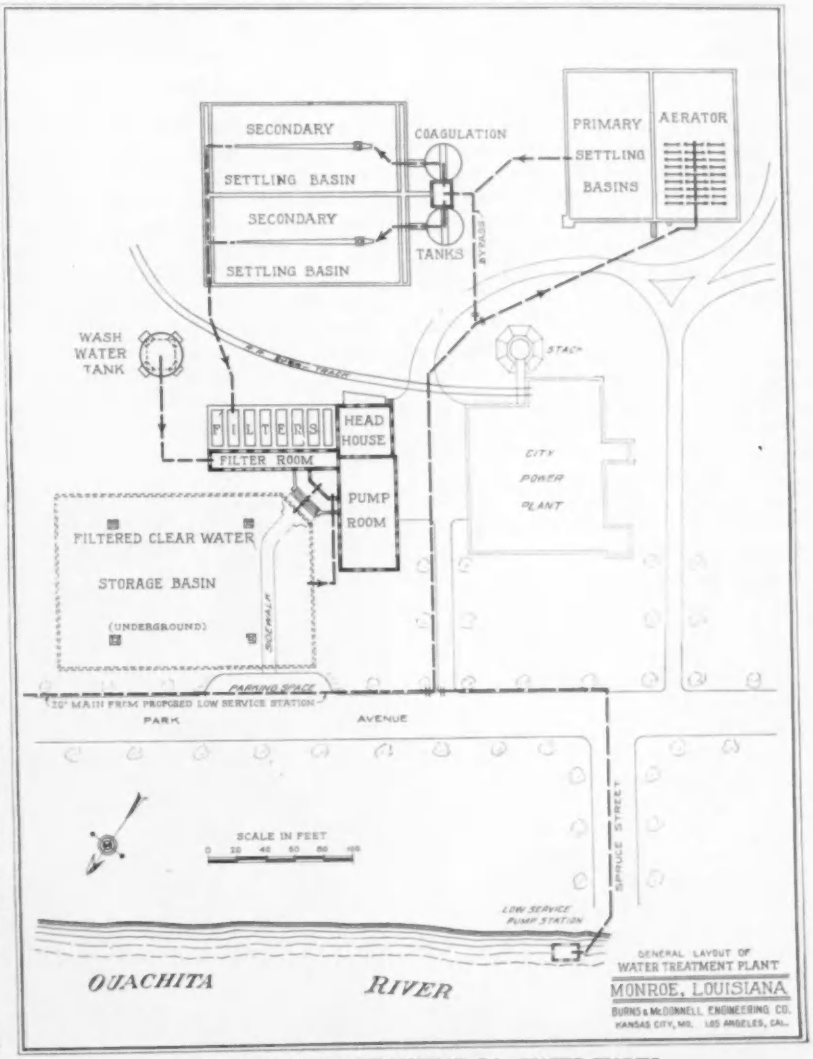
It is this periodic high salt content that has made necessary the improvement of the supply by the construction of a storage reservoir for collecting and storing water when the salt content in the river is diluted by flood stages. The reservoir will be created by the construction of an earthen dam across the Bayou DeSiard which connects with the Ouachita River about two miles above the filtration plant. A storage of about 600 million gallons will be afforded by this reservoir. An electrically operated pumping-station will be constructed at the dam site, which will deliver water from the river or from the storage reservoir to the filtration plant. The dam and pumping-station will be constructed sometime in the near future. Meanwhile, raw water will be furnished to the plant from the existing pumping-station on the Ouachita River, as shown on the accompanying map.

Minimum Labor Needed

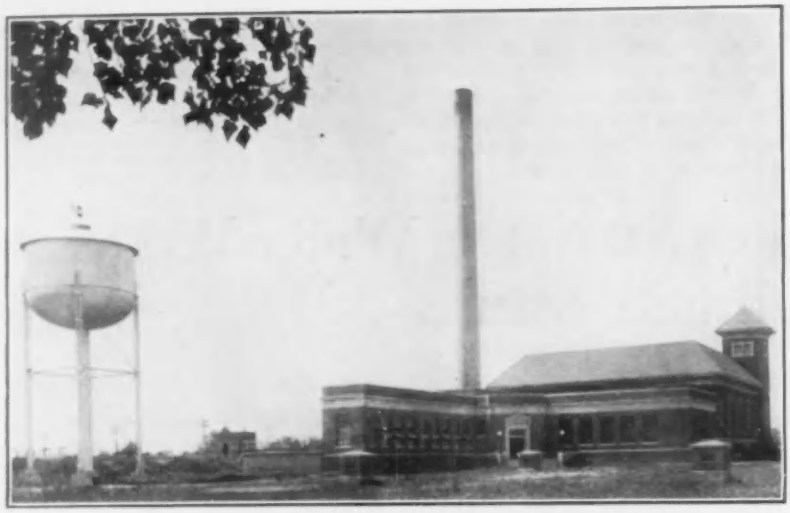
Careful consideration has been given in the design of the filtration and pumping-plant to matters of economy in operation and maintenance. Buildings are constructed of the most durable materials and are fireproof throughout. The plant is operated by one operator for each shift with a helper on one shift for janitor work. The chief operator is also a chemist, who makes all laboratory tests necessary in the control of treatment processes. The laboratory is one of the most complete in the state.

Design Permits Extensions

The arrangement of structures and equipment is intended to allow extension and increase in plant capacity at minimum cost and with minimum disturbance to existing facilities. Settling basins, mixing tanks and filters may be extended in units. The pump-room is so arranged that plant capacity may be greatly increased without change in pump-station structure. Provision is



LAYOUT OF THE NEW MONROE, LA., WATER WORKS



EXTERIOR OF MONROE, LA., WATER WORKS SHOWING ALSO THE NEW 500,000-GALLON STEEL TANK

made whereby pumping units may be replaced by larger units when needed without interruption to operation.

Old System

Previous to the construction of the new filtration and pumping-plant the water was delivered from the Ouachita River by motor-driven centrifugal pumps to a plain sedimentation basin, where it was given an application of alum and lime and allowed to settle for about three hours. The settled water was then delivered to the distribution system by motor-driven centrifugal pumps located in the municipal power-plant.

The water as delivered to the distribution system was of course not entirely satisfactorily for domestic consumption. Tastes and odors persisted; during the winter months the salt content rendered the water unfit for drinking. This condition resulted in the use of large amounts of bottled water for drinking and household purposes. The unsatisfactory quality of the water and the inadequate facilities for fire protection led eventually to the authorization of a bond issue of $600,000 in January, 1927, for the construction of the improvements described in this article.

The character of the raw water and the quality of water desired for distribution made it imperative that filtration be included in the treatment process. New pumping equipment and treated water storage capacity were required to furnish adequate facilities for fire protection, industrial and domestic consumption. The existing structures and equipment were so inadequate that they affected in only a small degree the plans for the improvements. New structures were built and new equipment installed on a site adjacent to the municipal power-plant. The old settling basins were incorporated in the revised plan of treatment as preliminary settling basins. A view of the new filtration and pumping-plant in the accompanying illustration indicates the general arrangement of structures and their relation to the municipal power-plant.

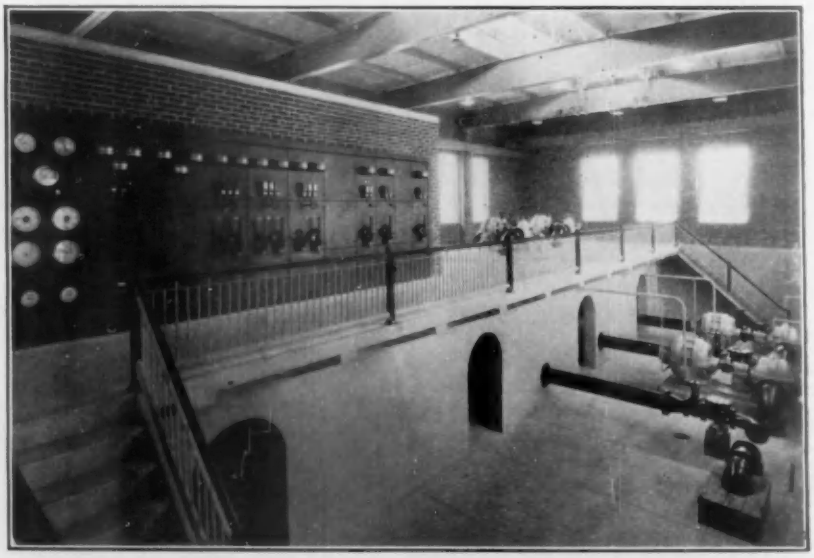
New Plan of Treatment

The general plan of treatment in the new filtration plant includes aeration, preliminary plain sedimentation, mechanical agitation of applied chemicals, secondary plain sedimentation, filtration and sterilization, in the order mentioned. Water is delivered by the low-service pumps to nozzle-type aerators placed above the existing basin and falls direct to the preliminary settling basin, where it is retained for about three hours. The function of the aerators is to remove dissolved gases, organic tastes and odors. It is carried then to the mixing tanks, where lime and alum are applied and thoroughly mixed. The chemicals form a feathery floc which assists in collecting the sediment and carrying it to the bottom of the secondary settling basins, which follow in the sequence of treatment. Water passes from the basins to filters where the remainder of sediment is removed. There are four concrete filter units in which is placed 30 inches of sand over 18 inches of graded gravel. Each unit has a capacity of 1,500,000 gallons in 24 hours. When sediment has accumulated on the surface of the sand, the filter is washed by reversing the flow of water through the sand, carrying the wash water and sediment to the sewer. After passing the filters, the water is sterilized with liquid chlorine and passed to a storage reservoir of 1,500,000-gallon capacity. It is then ready for pumpage to the distribution system as desired.

The pumping equipment consists of 1 4½-million and 2 6-million-gallon-per-day centrifugal pumps, each operated by a synchronous motor. In case of fire, 2 6-million-gallon-per-day centrifugal pumps are provided for boosting the station pressure to overcome additional friction losses in the feeder lines.

Effect on Fire Insurance Rating

The water-works improvement program was affected in a large measure by a consideration of the fire insurance rating. The original pumping and distribution facilities were grossly inadequate and insurance rates consequently high. Before plans were executed, the situation was reviewed with the engineer of the state insurance rating bureau, and a program outlined whereby the improvements were proportioned to give the greatest protection at the least cost.



INTERIOR OF WATER WORKS, SHOWING PART OF THE PUMPING EQUIPMENT

The distribution system was strengthened by additional main and secondary feeder lines, and a storage on the system of 500,000 gallons was provided in an elevated steel tank. The saving in insurance premiums has been estimated to approach the interest charges on the entire bond issue.

Storage Tank

The 500,000-gallon storage tank is on a 115-foot tower with a water depth of 35 feet. Functioning as an equalizing reservoir, the tank has effected a decided improvement in pumping conditions. The storage is providing for hourly peak loads and thereby making possible the operation of the centrifugal pumps at constant rates and constant head conditions. The storage also provides a large quantity of water immediately available in case of fire.

Operators to Be Fully Instructed

A new idea in the matter of engineering service is being rendered in connection with the operation of the treating plant at Monroe. Plant operation is being supervised for a period of one year by the engineers who designed the improvements. The supervision includes the design and equipment of a thoroughly modern water-works laboratory, the instruction of a technician, the preparation of a comprehensive record system, and miscellaneous advice concerning proper operation of treatment units. It is felt that this service will encourage a coordination of ideas between the designing engineer and plant operator which will tend to improve the results obtained in operation.

The various contracts in the construction program together with the contractors and contract sums are listed as follows:

Contract Number		Final Contract Sum
1.	Buildings and structures—B. E. Buffaloe & Co., Memphis, Tenn.	$221,778.24
2.	Filter equipment — Roberts Filter Mfg. Co., Darby, Pa.	29,390.00
3.	Pumping and electrical equipment—Walter Castanedo, Inc., New Orleans, La.	17,871.00
4.	Cast iron pipe and fittings—United States Cast Iron Pipe Co., Birmingham, Ala.	123,951.38
5.	Distribution system — W. H. O'Toole Construction Co., Monroe, La.	42,551.97
6.	Hydrants and valves—R. D. Wood & Co., Philadelphia, Pa.	10,901.68
7.	Elevated tanks—J. S. Schofields Sons Co., Macon, Ga.	27,800.00
	Total of contract sums	$474,244.27

CONTROL TABLES IN FILTER GALLERY

The surveys, plans and specifications and supervision were entrusted to Burns & McDonnell Engineering Co., Kansas City, Mo., and Los Angeles.

Westerville Sets New Low Tax Rate Record

WESTERVILLE, OHIO, has for a number of years followed a pay-as-you-go policy. Not only does it meet all operating expenses but also annually finances a large portion of new improvements out of current revenues, besides paying off old debts that date back as far as 1902.

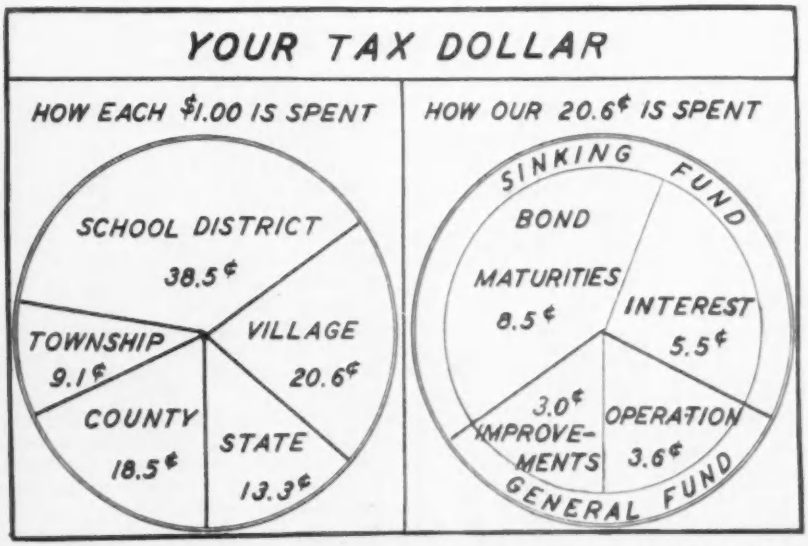
In 1928, the thirteenth year under the city-manager form of government, the tax rate for all village purposes reached a new low level of $4.50 per $1,000 valuation; the village retired over $18,000 of general bonds; paid out $14,700 for interest on the general bonded debt; paid for $7,246 worth of new improvements and extensions; met all operating expenses and closed the year with a balance in the general fund of $14,725.

During the thirteen years of city-manager administration the average annual tax levy for all village purposes has been $5.80 per $1,000 valuation, as compared with a $10.34 tax levy under the preceding mayor-council administration.

THE AMERICAN CITY in an editorial note prefacing an article on this enterprising village sometime ago* said. "Whether it is sound practice to finance a municipality largely from profits of its public utilities is a debatable question; but Westerville seems . . . . well pleased with this method of reducing the tax rate." That the local spirit is still one of predominant pride in municipal progress seems evident in the annual message of the Chairman of the Council, H. W. Troop, to the citizens, submitting to them the annual report of City Manager L. G. Whitney, in which he says:

"The most encouraging fact of the year's work has been the growing spirit of cooperation manifested by all of the citizens. The grateful appreciation of the village should go to all of its paid employees and to many who have given voluntary service in helping to further our progress. Individual citizens have frequently offered suggestions of value to the officials and employees. To all of these who have come to realize that Westerville *is our community and not the special charge of a few*, the Council expresses its thanks.

"We have a community for which we need not apologize to anyone. There are many things, however, that need to be improved. They cannot all be attained in a short time, but by persistent effort and wholehearted cooperation, Westerville can become a unique community in many ways. A united effort will make America's Biggest Little City also America's Best Little City."



THE CITY MANAGER SHOWS GRAPHICALLY HOW THE WESTERVILLE TAX DOLLAR IS SPENT

* "Low Tax Rates, Large Utility Earnings," May, 1924, pp. 537-39.

Why the City of New York Was Originally Unplanned—and Remains So

An Explanation Which Father Knickerbocker Returned to Make Last Month to One of His Descendants—and Some Wholesome Advice from the Old Fellow for Every City in the Land

"NOW I can reconcile *this* and *this*."

Father Knickerbocker leaned against the corner of a building on 42nd Street. With the first "this," he indicated the ancient leatherbound volume which he held opened under one arm. With the second "this," he pointed upward to where the topmost reaches of the 56-story Chanin building pierced the blue night, describing thence with uplifted arm a circle that took in the new Grand Central tower, the vast bulk of the Graybar Building and surrounding structures, and included the currents of humanity eddying along the sidewalks, and the street traffic alternately dead-locked and moved forward with slow and noisy convulsions.

"I feel more than ever I was right," he added as if moved by some inner necessity to explain himself. "But I can't stay Over There in peace when I'm being so publicly and unjustly discredited for my ignorance and arrogance in having fathered a city that has little sense to it and much confusion. One of my brilliant sons, you know, has even gone so far as to stand up and declare that it is about to choke itself to death in its greed for population. And everybody goes back to the fact that I put my *probatum est* on New Amsterdam's growing-up without a plan. They show the evidence. Here it is:

He moved to where a whole cluster of street lights fell full upon the antique leather volume conspicuously lettered *Knickerbocker History of New York*.* As he began reading, a policeman peered over his shoulder curiously, but as soon as he saw that the glittering object was the brass buckle of the old book rather than a flask top, he moved along and disapeared in the crowd. And Father Knickerbocker read on:

From Washington Irving's Account of the Attempt in 1665 to Prepare a City Plan for Manhattan Island

"The thriving state of the settlement and the rapid increase of houses gradually awakened the good Oloffe from a deep lethargy, into which he had fallen after the building of the fort. He now began to think it was time some plan should be devised on which the increasing town should be built. Summoning, therefore, his counsellors together, they took pipe in mouth and forthwith sunk into a very sound deliberation on the subject.

"At the very outset of the business an unexpected difference of opinion arose, and I mention it with much sorrowing, as being the first altercation on record in the councils of New Amsterdam. It was a breaking-forth of the grudge and heartburning that had existed between those two eminent burghers, Mynheers Tenbroeck and Hardenbroeck, even since their unhappy altercation on the coast of Bellevue. The great Hardenbroeck had waxed very wealthy and powerful from his domains, which embraced the whole chain of Apulean mountains that stretch along the gulf of Kip's Bay, and from part of which the descendants have been expelled in latter ages by the powerful clans of the Joneses and the Schermerhornes.

"An ingenious plan for the city was offered by Mynheer Tenbroeck, who proposed that it should be cut up and intersected by canals, after the manner of the most admired cities in Holland. To this Mynheer Hardenbroeck was diametrically opposed, suggesting in place thereof that they should run out docks and wharfs by means of piles, driven into the bottom of the river, on which the town should be built. 'By these means,' said he triumphantly, 'shall we rescue a considerable space of territory from these immense rivers, and build a city that shall rival Amsterdam, Venice or any amphibious city in Europe.' To this proposition Tenbroeck (or Ten Breeches) replied, with a look of as much scorn as he could possibly assume. He cast the utmost censure upon the plan of his antagonist as being preposterous and against the very order of things, as he would leave to every true Hollander. 'For what,' said he, is a town without canals?—It is like a body without veins and arteries, and must perish for want of a free circulation of the vital fluid.' Tough Breeches, on the contrary, retorted with a sarcasm upon his antagonist, who was somewhat of an arid, dry-boned habit; he remarked, that as to the circulation of the blood being necessary to existence, Mynheer Ten Breeches was a living contradiction to his own assertion; for everybody knew there had not a drop of blood circulated through his wind-dried carcass for good ten years, and yet there was not a greater busybody in the whole colony. Personalities have seldom much effect in making converts in argument; nor have I ever seen a man convinced of error by being convicted of deformity. At least, such was not the case at present. Ten Breeches was very acrimonious in reply, and Tough Breeches, who was a sturdy little man, and never gave up the last word, rejoined with increasing spirit. Ten Breeches had the advantage of the greatest volubility, but Tough Breeches had that invaluable coat of mail in argument called obstinacy. Ten Breeches had, therefore, the most metal, but Tough Breeches the best bottom—so that, though Ten Breeches made a dreadful clattering about his ears, and battered and belabored him with hard words and sound arguments, yet Tough Breeches hung on most resolutely to the last. They parted, therefore, as is usual in all arguments where both parties are in the right,

The Failure of the 1929 New York Legislature

to enact the bill drafted at Mayor Walker's suggestion by Edward M. Bassett, which would have authorized an official planning commission for the city of New York, gives point and timeliness to the words of Father Knickerbocker here quoted.

Disagreement among the burgomasters of the New Amsterdam of 1665 had its deadly parallel in disagreement among the borough presidents of the New York of 1929. Had the city administration been united in a common purpose, instead of emulating the altercations of those two eminent burghers, Mynheers Tenbroeck and Hardenbroeck, the Legislature would no doubt have given the city planning measure its approval.

As Father Knickerbocker asks in the accompanying article, Must this chaos always continue?

* Knickerbocker History of New York.—A history of New York from the beginning of the world to the end of the Dutch dynasty containing many surprising and curious matters, the unutterable ponderings of Walter the Doubter, the disastrous projects of William the Testy, and the chivalric achievements [sic] of Peter the Headstrong, the three Dutch governors of New Amsterdam; being the only authentic history of the times that ever has been, or ever will be published, by Diedrich Knickerbocker (*pseudo.*), New York [Washington Irving]. Published by Inskeep and Bradford, Bradford and Inskeep, Philadelphia; Wm. M'Ilheeney, Boston; Coale and Thomas, Baltimore; and Moreford, Willington and Co., Charleston, 1809.

PURCHASE OF MANHATTAN ISLAND BY PETER MINUIT, 1626

It may have been too early to plan the Island then. It may be too late to save parts of it now. But will the other boroughs and other cities learn the lesson? The gist of it is that somewhere between straightjacket planning on the one hand and undirected, confused development on the other there lies a field for constructive guidance by highly skilled, imaginative planners for city and region

FATHER KNICKERBOCKER—"ONLY ONE AHEAD OF ME, LONDON."

CARTOON FROM THE NEW YORK HERALD OF MARCH 26, 1897

Showing a map of the new Greater New York and the comparison of its then population with those of the principal cities of the world. According to Census Bureau estimates, New York's population has just about doubled during the 32 years which have since elapsed. What will conditions be when the population has again doubled, unless some far-sighted city planning is done meanwhile?

Illustrations on this page furnished by the Regional Plan of New York and Its Environs, through the courtesy of the New York Public Library

without coming to any conclusion; but they hated each other most heartily for ever after, and a similar breach with that between the house of Capulet and Montague did ensue between the families of Ten Breeches and Tough Breeches.

"I would not fatigue my reader with these dull matters of fact, but that my duty as a faithful historian requires that I should be particular; and, in truth, as I am now treating of the critical period when in our city, like a young twig, first appeared the twists and turns that have since contributed to give it the present picturesque irregularity for which it is celebrated, I cannot be too minute in detailing their first causes.

"After the uphappy altercation I have just mentioned, I do not find that anything further was said on the subject worthy of being recorded. The council, consisting of the largest and oldest heads in the community, met regularly once a week, to ponder on this monstrous subject; but either they were deterred by the war of words they had witnessed, or they were naturally averse to the exercise of the tongue, and the consequent exercise of the brain. Certain it is, the most profound silence was maintained—the question, as usual, lay on the table—the members quietly smoked their pipes, making but few laws, without ever enforcing any, and in the meantime the affairs of the settlement went on—as it pleased God.

"As most of the council were but little skilled in the mystery of combining pothooks and hangers, the determined most judiciously, not to puzzle either themselves or posterity with voluminous records. The secretary, however, kept the minutes of the council with tolerable precision, in a large vellum folio, fastened with massy brass clasps; the journal of each meeting consisted but of two lines, stating in Dutch that 'the council sat this day, and smoked twelve pipes on the affairs of the colony.' By which it appears that the first settlers did not regulate their time by hours, but pipes, in the same manner as they measure distances in Holland at this very time; an admirably exact measurement, as the pipe in the mouth of a true born Dutchman is never liable to those accidents and irregularities that are continually putting our clocks out of order.

"In this manner did the profound council of New Amsterdam smoke, and doze, and ponder, from week to week, month to month, and year to year, in what manner they should construct their infant settlement: meanwhile, the town took care of itself, and like a sturdy brat which is suffered to run about wild, unshackled by clouts and bandages, and other abominations, by which your notable nurses and sage old women cripple and disfigure the children of men, increased so rapidly in strength and magnitude, that before the honest burgomasters had determined upon a plan, it was too late to put it in execution—whereupon they wisely abandoned the subject altogether."

Father Knickerbocker closed the book with a snap; and reading gave way to ruminating:

How Father Knickerbocker in 1929 Would Justify the 17th Century Inaction of Himself and His Honest Burgomasters

"It wasn't ignorance of the history of cities. Before the track of wilderness that was destined to become Broadway was even a calfpath, I had considered the great ancient cities of the Mesopotamian plains: I had pondered over the spacious and pleasantly patterned areas of Nineveh as described by the best historians. I had marveled at the beauty of Babylon with its streets laid out in orderly squares and the whole cut diagonally by the Euphrates—with a third of the entire territory, like that of later Rome, occupied by pleasure-spaces, and with its hanging gardens which have not yet been excelled by any landscape architect for their boldness and originality of design.

"I had observed how the Greece of the fifth century B. C. had absorbed and adapted to its own glorious uses the idea of the planned cities of the Orient, and how Aristotle had added to city planning what is now popularly known as zoning. For is he not credited with having advanced the principle of right grouping of dwellings in the different parts of the city of Athens, as well as the combining of these parts into a proper whole around the market-place—or the Civic Center, as your modern city planners would say.

"I had traced the evolution of the medieval cities of France, Germany, and a large part of middle Europe, and knew how they were developed around open market-places. (There were more real 'civic centers' in those old cities than in all of America today!)

"I knew the evils of crowding, for I had gone back to the history of the great early trade centers of Byzantium and Alexandria, with their polyglot masses of population crowded into fifthy tenements and damming the narrow streets and even the roadways outside till all the well-endowed element of the residents had to flee and establish groups of estates in the suburbs. I had read of the Rome of Trajan and Augustus, where overcrowding and improper living conditions caused building heights to be fixed at a maximum of 60 and 70 feet.

"Then why hadn't I, it is easy for them to ask me, profited by the good examples and been warned by the bad? Why hadn't I taken to heart the lesson of the Prophet Ezekiel when he said: *'Thou, also, son of man, take thee a tile and lay it before thee, and portray on it a city.'* I'll tell you: Historic examples of the beauty of vast open areas and of the evil of congested population meant nothing to a little handful of modern children-in-the-wilderness whose world was all open areas, and whose terror of this space drew them together as tightly as possible for mutual self-protection and peace of mind, and so fostered the original, incurable New York taste for crowding.

"City planning is an old art. It consists in the best practical disposition of the territory occupied by a community in the present or—so far as future needs can be foreseen—to be occupied by it in the future. But *you can't plan intelligently for future growth till the direction of that growth can be foreseen or controlled,* and the precedent of the Orient, of ancient Greece and Rome, and of Medieval Europe had little of more practical value to the earliest New Amsterdam than it offers today to the city for the motor age and the steel construction era. By the time President Washington had begun to plan for the Capital City on the Potomac, New York, for better or worse, had begun to regard itself as uniquely destined—as a law unto itself. The state of mind has become chronically fixed. If I wanted to argue that there's some justification for it, I might point out the fact that *even at the opening of the present century New York had no traffic problem of consequence* nor the premonition of one. How, then, could even an ecumenical congress of brilliant planners have prepared for the present situation? Would any of their ideas have appreciably lessened the present vicious circle of transit development and congestion, streets wholly inadequate without widening, and the most important ones solidly lined with skyscrapers, each housing a population large enough for a walled city of the Middle Ages—subways urgently needed where there is hardly room for a crowbar between already existing underground structures—multiple-level streets demanded at the price of erecting a moderate new city, and each new facility creating more traffic than it relieves."

Is Chaos an Incurable Civic Malady?

"There are new conditions, but the same old alarms." Father Knickerbocker thumbed the pages of his book till he found this passage:

"Such a clamor of tongues, such running hither and thither. Everybody in a hurry, everybody up to the ears in trouble, everybody in the way, and everybody interrupting his industrious neighbor who is employed doing nothing. . . every mother's son in New Amsterdam busying himself most mightily on putting things into confusion and assisting in the general uproar."

"But," he continued, again closing his book, "because human foresight can't span a century, must this chaos always continue? The fact that the business men of New York cannot foresee with certainty the commercial needs and methods of 2029 does not prevent them from planning for next year and for five or ten or twenty years hence. What our cities need is not unguided confusion on the one hand, or staitjackets on the other; but city and regional planning commissions constantly applying to changing civic needs the highest possible degrees of constructive imagination, technical skill and unselfish cooperation in community development."

"Right you are!" The exclamation was involuntary, but Father Knickerbocker hadn't heard it. He had disappeared as completely as if he hadn't been there at all.

THERE IS NO LONGER HOPE FOR SPACIOUSNESS HERE—

BUT THERE IS AMPLE ROOM YET, EVEN IN THE METROPOLITAN REGION, FOR THE PRESERVATION OF OPEN SPACES AND THE PREVENTION OF NEEDLESS CONGESTION

Roadside Improvement—A National Movement Well Under Way

THERE is a new planned beauty abroad in rural America. The old "good roads" shibboleth has been revived with a new implication. Along paved highways and important arteries of traffic in every quarter of the country, lengths of orderly landscaping are beginning to appear. Federal aid is being invoked for the furtherance of a project which first began to be carried into practical operation by state highway department initiative. Thomas H. MacDonald, Chief of the Bureau of Public Roads, Department of Agriculture, who has definitely undertaken to provide competent and expert advice in all undertakings in this direction, recently said:

"After a somewhat extensive inspection of the highways of other countries, I am convinced that a very large part of the favorable comment they receive, and the pleasure of driving over them, comes from the planting and care of the roadsides. We cannot longer fail to make roadside protection and beauty a national project."

Two other bureaus of the Department of Agriculture—the Forestry Service and the Bureau of Plant Industry—are also able to give valuable assistance to the movement. That it is already a national movement, and one well under way, the accompanying map will show.

This map was developed by James P. Taylor, Executive Secretary of the Vermont State Chamber of Commerce, as one of the results of a recent nation-wide inquiry directed to state highway engineers, state civic bodies, and others. The story which it tells in graphic form is, briefly this:

That ten states now have under way official state highway department activities in roadside beautification and landscape work and the acquisition of desirable adjacent property, and that these activities are financed as regular maintenance expenditures or from special funds. For the most part the whole program is under professional direction and supervision. These states are California, Connecticut, Delaware, Massachusetts, Michigan, Missouri, Oklahoma, Oregon, Pennsylvania and Rhode Island.

That in two states such programs are contemplated, and are expected to be in operation within the next year or so. These are Georgia and Louisiana. In one state, South Carolina, indicated by the same legend, the State Highway Department is now in process of setting up Judicial Circuit Beautification Organizations to be financed by private funds;

That in two states, official recognition and encouragement are given efforts of local private organizations. In Indiana, the State Highway Department systematically promotes and cooperates in private organization efforts while in Illinois the Department issues permits and extends supervision;

That in thirteen states and the District of Columbia, State Highway Departments (and the corresponding authority in the latter case and in one case a Forestry

THE STORY THUS FAR OF ROADSIDE IMPROVEMENT IN THE UNITED STATES

Ten states have official Highway Department beautification and landscape programs financed from public funds, and for the most part professionally directed and supervised (No. 1). Three states have expectations of Highway Department beautification and landscape activities within the next year or two (No. 2). Two states have systematic programs carried on through the enterprise of local private organizations with Highway Department cooperation or supervision (No. 3). Thirteen states and the District of Columbia have activities more or less widespread on the part of individuals and citizens' organizations with more or less cognizance, encouragement, and cooperation of state officials (No. 4). Activities of various sorts, which, taken altogether, total an enormous change in the landscape of the country as it presents itself to the motorists are represented only by a blank (No. 5) on the map but some account of them is given in the accompanying article. Outline map reproduced by permission of Rand McNally and Co.

Department) officially recognize, encourage, promote, and otherwise make broad provisions for effective roadside improvement work on the part of state and local citizens organizations and individual citizens—or at least give cognizance to such work. These are: Alabama, Arizona, Arkansas, Colorado, Florida, Kentucky, Maryland, Minnesota, North Carolina, Virginia, West Virginia, Vermont, and Wisconsin;

That while nineteen states are shown to have no organization for promotion of roadside beauty, there is none in which some activity along this line has not been inaugurated, for, as Mr. Taylor says, "Keeping down the weeds and keeping out the signs from the right-of-way, seeding the shoulders to hold them, and grassing the slopes of cuts and fills to prevent erosion, count for both utility *and beauty*."

State Highway Activities

How many miles—how many trees already planted? These facts remain unrecorded in a study which does, however, record emphatically that state highway engineers as a whole are now "intent and eager to give us roads that charm as well as serve." It also records among high-light facts that in California there are now 600 miles of planted trees along the roadsides as a result of work which has been under way for some years; that there are approximately 2,000 trees set along 40 miles of highway in Oklahoma as a result of activities in 1927 alone; that 54,588 trees have been planted on the borders of state highways in Massachusetts during the last 22 years; that 10,000 small evergreen trees were planted along the highways of Indiana in 1928; and that 140,000 mixed pine seedlings were planted along trunk lines in Michigan in 1928.

"In states where such results have not yet been achieved," Mr. Taylor finds a "conviction on the part of highway officials that activity is inevitable and desirable, something in which the state highway department must play its part." From Nevada, the one state in the union which has gone furthest in the matter of protecting its natural scenery along highways from invasion of billboards, it is reported that "at a future date a few of the highways in the western portion will be planted with shrubs and trees." Nothing has been done in New Hampshire, but State Highway Department sentiment is, "We cannot afford to let this matter get away from us"; while Minnesota officials have "barely started on a roadside improvement program," but "it is a matter that will quite naturally follow the construction of highways."

Citizens Organization Aid

In some states, population is sparse, distances are great, and total road improvement funds are as yet inadequate to justify expenditures on roadside work. In others, there is still need for funds to carry the state highway system construction to completion. In such states citizens and citizen organizations "need only to be appealed to to rush in where state highway departments are not financially equipped to tread alone. This they have done in state after state." In Florida, a State-Wide Beautification Club is very active and expects to accomplish worth-while results on a large scale within the next year or so, either through state legislation or through local civic organizations. Similarly, there is an extensive movement under way in Wisconsin on the part of an association known as the "Friends of Our Native Landscape" to induce the various counties to take an active part in saving the trees and shrubs along the highways, and planting more. Quite a number of counties have been cooperating to this end for several years. In Colorado, some work along the same lines has been, and is being, done by the State Historical Society. In Arkansas, there has been an attempt in this direction by civic organizations; in Alabama, women's clubs have done some work. In Arizona the Valley Beautification Campaign of the Phoenix Chamber of Commerce has been the one outstanding achievement.

West Virginia, Kentucky, and North Carolina have, here and there, work done by local organizations, and the garden clubs of Virginia have done some work. In South Carolina, the State Highway Commission is itself taking the initiative in the setting-up of a system of Beautification Organizations, as already mentioned, these being in accordance with the following: "That each member of the State Highway Commission is hereby requested to encourage, and wherever necessary to initiate, the establishment of a permanent Highway Beautification Organization in its judicial district." In Vermont, the State Chamber of Commerce, with approval of the State Highway Department, is cooperating with local chambers of commerce in the appointment of committees for the beautification of the highways of their regions.

Complex Relationships

There seems to be almost every possible variety of relation between the State Highway Departments and the citizens organizations interested, from Arkansas, where the Department does not feel itself in a position to "take cognizance" of the activities of citizen committees, to the other extreme as represented by Illinois, where cooperating private organizations work under permits of the State Highway Department and in conformity with established Department policy. Typical policy, as in Maryland, is to encourage people to plant trees along the highways wherever possible. The State Forestry Department is the managing authority there.

The state of Washington stimulates and capitalizes the interest and enthusiasm of individual citizens living along the highways. A law of 1927 provides that lawns, trees, shrubbery, etc., may be planted on state highway rights-of-way so long as planting does not interfere with maintenance and construction. (Permission of this kind, if extended broadly through the states and broadly taken advantage of, will almost inevitably call for the establishment of definite standards of planting in order that good results may be obtained thereby instead of a hodgepodge.) Washington had already passed in 1925 a law for protection of shrubs and flowers on both public and private property along public roads against vandalism.

Official Beautification Personnel

Where roadside improvement has been placed by law in the hands of the State Highway Department, a Landscape Division, a Forest Unit, or similar bureau has been organized, or a beginning has been made through the employment of specialists who supervise beautification activities both on the part of Highway Department employees and of cooperating citizen associations or individuals. Such divisions, or units, are steps in a recent development. Although Massachusetts began work on roadside improvement in 1921, and both California and Connecticut have planted trees along roadsides for several years, it was not until the summer of 1927 that Connecticut organized for her Landscape Division, that the Michigan Maintenance Department took over the task of beautifying trunk line roads, and that Oklahoma began planting trees for highway beautification. It was not until 1928 that California employed a landscape engineer, Missouri a landscape architect, and that Pennsylvania set about organizing a State Highway Department Forestry Unit.

Highway policy under these authorities and on the part of the more progressive State Highway Departments everywhere, looks nowadays to certain well-recognized essentials: wide rights-of-way; shoulders grassed and sodded; slopes, whether of the cut or fill type, planted with trees, shrubs, vines and grass; weeds along the roadsides kept mown; and dead tree limbs, and other debris kept cut so that the small growth will not be stifled. Even in states shown as blanks on the map, there are certain definite plans and provisions which, though small at the moment, promise well for the future. In Idaho there is

an official attempt to establish roadside highway parks; in Utah, there is intention to experiment with trees which may withstand the climate; in Iowa, small "parklets" are to be established along the highways according to preparations being made; the State Highway Department instructions in New Mexico are to "spare trees," "spare prehistoric ruins, even if it necessitates relocating a bridge or highway."

Propaganda for Citizen Support

All of the foregoing and other pertinent facts have been gathered and are being effectively used by the Vermont State Chamber of Commerce in its highway beautification campaign. Posters and Good Roads bulletins widely circulated throughout the state have been the chief means of disseminating the propaganda, which has alternated in its tone between challenge and inspirational encouragement, and which has already been productive of results on the part of local chambers of commerce and others which promise fine achievements. This pioneering literature has also attracted widespread attention outside the state, and has been in demand on the part of both State Highway Departments and civic organizations. One poster, in particular, with the map, stands out distinctively. It was entitled RAW, and was issued early after the initiation of the program in Vermont. The comment of Major James C. Fitzmaurice, of the Bremen crew, who flew over Vermont on his way to New York —"So Raw and New; Not Artistic As My Country Is"—was given prominent display, and related to the equally prominently displayed fact of "Nine Raw Slopes" along Vermont's perfect state highway between Windsor and Ascutneyville.

"From some of the slopes a mud slush was washed down by spring rains, and covered part of the highway. Think of it"—invited this poster—"a supposedly mudproof highway covered with mud because the soil of the slope was not anchored by grass and shrubs and trees to stay where it belonged. Then other of these slopes are far from *green*. *Just dirt color, dead brown, ugly as sin.* No wonder Fitzmaurice's comment spoken in friendly fashion was . . . 'not yet artistic as my country is.'

"Now let's meet this challenge from the skies," was the appeal. The way it was met, and the way it is being met, and the way the manner of its being met in Vermont is serving to inspire citizen activities elsewhere, give assurance of a great just-beginning-to-be-utilized source of energy for aiding state and nation in this whole movement. The movement itself is a constructive project of public interest such as President Hoover had in mind when he alluded to a new principle of relation between the government and its citizens, in which lie potentialities for the common good as yet barely touched.

Two New Cities Are Born Near Detroit

A FEW months ago the citizens of Halfway, Mich., indicated their desire that their village should become a city under provision of the Michigan Home Rule Act, and that it should henceforth be known as the city of East Detroit.

The matter was very simply settled. Nine representative villagers were elected to act as a charter commission, and immediately undertook a study of the various systems of municipal government possible for adoption. In spite of some sentiment for the old commission plan, the charter group determined upon the commission-manager form as most adequately meeting present-day requirements.

The Model Charter developed and issued by the National Municipal League, was used as a basis for drafting the new instrument, and charters now in effect in various city manager municipalities were also studied. Approval for the new charter was secured from the Governor and the Attorney General of the state, and upon its submission to the people, the charter was adopted by a vote of six to one. "Fortunately," reports Otto Rosenbusch, an East Detroit attorney who was actively interested in the change, "the new Mayor and three of the four Councilmen had been members of the charter commission, so that a fair trial of the plan is apparently guaranteed."

The city of East Detroit is in Macomb County and immediately abuts Detroit on its Wayne County line. It is the first municipality in the county to adopt the manager plan.

But being born is not so simple for all cities—even in Michigan. The city of Dearborn was created almost coincidentally with East Detroit, following an extensive (and intensive) educational campaign among the people of Fordson, Dearborn Village, and a part of Dearborn Township, which have been merged in the consolidation. The city of Dearborn came into existence with a population of over 35,000; an area of 14,767 acres, or nearly 23 square miles; and an assessed property valuation of $265,000,000. Henry Ford's home, his River Rouge factory, his airport, and his airplane factory are within the new city, the creation of which had his advocacy.

Because of divided sentiment on the consolidation, and because of the many complex problems to be made clear to voters, a Consolidation Committee was active in advance of election. "Progress" was its slogan. "Ours is an age of progress." "To keep up with the times we must go forward." "Be progressive: Vote Yes," it urged. One of its educational efforts was the publication of a pamphlet with extensive tabulations of pertinent questions and answers and with a glowing list of advantages to be gained from the amalgamation of the three units. To quote but a few:

"A guarantee of future existence for the community having both industrial and residential properties of sufficient area to assure required growth to make it the outstanding city of this county.

"Lower taxes assured through growth and increased valuation which is inevitable on account of the unique combination of industrial and residential properties.

"A city of beauty with its parks, golf courses, boulevards, schools, churches, etc.

"The establishment of a municipal hospital unexcelled.

"The ability to create purely industrial and residential districts through proper zoning.

"A standing among the cities of the state that will enable us to have adequate representation in state affairs and secure needed favorable legislation."

The Dearbornite, a monthly bulletin devoted to local public affairs and edited by Ralph D. Ernest, one of the new City Commissioners, devoted a pre-election issue to " the most important election in the history of any of the communities," presenting strong arguments for the new charter, and explaining its workings chapter by chapter.

The charter, as drawn up and adopted, provides for the so-called "strong mayor" plan and is somewhat along the lines of the one in effect in Detroit. Dearborn had a manager before, but "political complications" prevented the adoption of the manager form in the charter of the consolidated city. Former City Manager Robert H. Erley is City Engineer under the present administration.

A notable feature of this new administration is the salary scale for elective officials, which is exceptionally high for a municipality of the size of the present city of Dearborn. The mayor's salary is $4,000; clerk and treasurer, each $5,000; councilmen, $3,000 each; justices, $6,500 each. This point of policy was adequately discussed in pre-election publicity and a point was made of the comparison of the proposed figures with those of ten representative cities, all from one-and-a-half to ten times the size of the proposed new city and all paying, comparatively, much lower salaries; most of them paying actually less in almost every classification.

A New Way to Be Born

A unique experiment in the creation of a city, new in form, magnitude and structure though old in its component physical parts, is now taking place in the Pittsburgh metropolitan region and will be described next month.

Street-Cleaning Methods in the West and Southwest—Part I

By THESTA KENNEDY
RAYNE, LA.

Fort Smith, Arkansas

STREET cleaning is now considered one of the most important of municipal services. When streets were only dirt roads, sprinkling was all that was expected by the people. The density of population has increased and the amount of street dirt has decreased, but the character of the street dirt has changed so that there is now less coarse dirt and much more fine dust which is easily blown into residence and business houses. Besides the general discomfort from it, there is material damage caused by it to the stock of business houses, to the health of the people breathing it, and to the citizens' pride in the city.

Fort Smith, Arkansas

From 1906 to 1921 the city of Fort Smith cleaned its streets by the use of "white wings." From 1921 to 1923 a horse-drawn sweeper was used. From 1923 up to the present time an Austin-Western motor sweeper has been used. In April, 1928, a new Austin-Western sweeper was purchased. Before the city bought the new machine, information from cities all over the country was secured as to the best method of street cleaning, and it was found that the majority preferred the sweeper to the flusher. The cost of cleaning with the machine is 22 cents a 1,000 square yards, which is approximately one-fifth the cost of hand cleaning.

Approximately 2,895,832 square yards are cleaned per month. The salaries for doing this work are $250 a month for the operators, and $243 per month for the truck crew. The business district is cleaned every night, and the residence streets are swept during the day. There are approximately 85 miles of paved streets to be cleaned, which include asphalt, brick, and concrete. In Fort Smith common laborers are paid $3 a day.

(Data furnished by W. H. Vaughan, Commissioner of Streets.)

Pueblo, Colorado

Street pavement cleaning began in Pueblo when the first pavement was laid, over twenty years ago. The amount of street cleaning has increased with additional paving, which now amounts to approximately fifty miles.

It is sometimes difficult to establish a permanent, systematic method of street cleaning. What applies to one section of the city does not necessarily apply to some other. For example, in the business district the only cleaning possible in the daytime is hand sweeping and pick-up by small trucks and this is very inconvenient and more or less ineffective, because of traffic interference and the parking of cars along the curb. Night cleaning is done by hand sweeping and motor flushers, assisted by broom-men following them. This is done every night except in extremely cold weather when the water freezes on the street, creating a safety hazard.

In the residence districts hand sweeping and pick-up are done, followed by flushers with broom-men only where the grade is flat and water will not run swift enough to carry away the rubbish collected.

During the year 1927 the city spent $9,911.56 for pavement cleaning. Rubbish removed from the streets and alleys in the business districts during 1927 was 2,933 cubic yards; from the residence section, 2,052 cubic yards. The street cleaners of Pueblo are paid $4.20 per day. The cost for 1928 was $9,932.85.

(Data furnished by E. E. Colby, Superintendent, Department of Parks, Highways and Lighting.)

Colorado Springs, Colorado

The street-cleaning force of Colorado Springs consists of one Ford dump-truck, four men with carts and brooms, and one Elgin motor pick-up sweeper. This force covers the 15 miles of paved streets of the city. The men and carts are used for cleaning around parked cars in the business district where the traffic is congested and where it would be difficult for the motor sweeper to work to any advantage. The motor sweeper is also used for sweeping the paved streets of the residential district.

A PICK-UP SWEEPER OWNED BY THE CITY OF COLORADO SPRINGS, COLO., NEGOTIATING A TURN AND SHOWING THE OPERATION OF THE GUTTER BROOM

Trash cans are distributed throughout the city, from which collections are made daily by the Ford dump-truck. The men with carts have regular places for dumping the trash.

The paved streets of the downtown district are flushed weekly by a 1,200-gallon capacity motor flusher. The city has a total of 150 miles of streets and 75 miles of alleys, of which 15 miles of the streets are paved and 1½ miles of alleys.

(Data furnished by Curtis Engle, Clerk, Street Department.)

Phoenix, Arizona

Streets in the congested district of the city of Phoenix are flushed twice a

AN ELGIN PICK-UP SWEEPER WITH GUTTER BROOM, USED BY THE CITY OF PUEBLO, COLO.

week and hand-swept every night, and there is white wing service every day except Sunday.

Streets outside the congested district are cleaned with Elgin motor pick-up sweepers from six times a week to twice weekly, according to the district and the condition of the streets, and intersection are swept once a week by hand.

Refuse, including brush, etc., is picked up once a week from certain districts, and the entire town is cleaned every two weeks. Street sweepings and refuse are all dumped at the city dump, which is two miles from the city.

(Data furnished by W. J. Jamieson, Superintendent of Streets.)

Ogden, Utah

The city of Ogden has two 1,000-gallon Tiffin motor-driven flushers. The drivers are paid at the rate of $5 per day, and they work every day washing the paved streets in Ogden. They also clean catch-basins and storm sewers. There are over 40 miles of paved streets, and the cost of this work amounts to about $210 per month for each machine. During the winters the machines are placed in the city shops general repairs, as they are useless until spring comes or about the time of the early thaw, when they are placed in service again, washing ice from the pavements and keeping gutters clean.

In connection with the flushers, there are two trucks of 2-ton capacity each, with a crew of three men, one driver and two laborers each. These trucks are called clean-up trucks and they follow the flushers, cleaning gutters, catch-basins, and storm sewers. The trucks cost about $308 per month each to keep them running. They, too, in winter are overhauled and used for hauling snow and ice from downtown sections. Oftentimes the two Pierce-Arrow and Chevrolet trucks are used in this cleaning when the season is very dry. With the paved streets and also the unimproved ones there are nearly 80 miles of curb and gutters to keep clean.

There is a rather undersized organization of white wings who work in the business section most of the year. There are five of them and they are paid $3 per day each.

(Data furnished by H. R. Tripp, Street Supervisor.)

Wichita, Kansas

There are 200 miles of paved streets in Wichita, principally of asphalt, brick, and concrete. Street cleaning has been in use for about twenty-five years—ever since the city has had pavement. Until 1919 the street cleaning was nearly all done by hand and gutter wagons. For a short time the city had a horse-drawn sweeper, but it was not very successful. In 1919 the first Elgin motor sweeper was bought for the city, the second in 1921, and the third in 1923.

In the street cleaning department there are now used three Elgin motor sweepers, one street flusher, nineteen laborers, five gutter wagons, and one truck.

For cleaning the business districts, one flusher with one laborer is used, twelve white wings—colored men, and three gutter wagons. On account of traffic in the daytime, the street flusher is operated at night only. In 1927 the flushers operated 195½ nights, and traveled 3,224 miles in flushing the streets, the total cost being $2,640.54.

Each white wing has a number of blocks to clean in the business district, the number varying according to the accumulation of rubbish on the street, and each laborer goes over his territory twice a day. The gutter wagons haul the rubbish to the dump. The cost of cleaning the streets with twelve white wings and three gutter wagons for 1927 was $28,263.56.

For cleaning the residence districts, the Elgin motor sweepers are used with two gutter wagons, one truck, and three laborers. This includes the hauling of sweepings to the dump. Each of the sweepers cleans one-third of the streets in the residence sections, and covers his territory about once every two weeks.

During 1927 the three sweepers operated a total of 432½ days, not being able to operate in wet weather, and traveled about 6,976 miles cleaning approximately 24,554,400 square yards, and picking up approximately 8,515 cubic yards of sweepings, at a cost of $8,825.72.

The total cost of street cleaning for 1927 was $39,729.82, which includes all labor, repairs, gasoline, and oil.

(Data furnished by James Murry, Director of Public Service.)

Topeka, Kansas

Street cleaning in Topeka has been a daily task for the past forty years. Many different ways are used to clean the streets. On the principal street, or business block, a power flushing machine is used, costing the city about $8,000. This work is done early in the morning and is followed by a gang of men consisting of about fifteen colored men that sweep the streets with a heavy fiber push-broom. The sweepings are hauled in small push-carts and piled at one corner of the beat on which the men are working, then gathered up by a truck and hauled to a dump. A certain territory is allotted to each man in the gang, and they do nothing but sweep.

In the spring of each year all the alleys are cleaned, and such trash as tin cans, paper and any other rubbish is hauled away. This is done by an extra gang, which is hired for this particular purpose. Then in the fall of the year after the leaves begin to fall, all leaves that fall on parkings and in the streets are hauled away. The leaves are watered the day before gathering them by one of the city flushers. The following day the extra gang piles these leaves all along the gutters of the streets, and they are gathered up by another gang, loaded into wagons and trucks, and hauled to the dumps. On streets in the residential section an Elgin motor street sweeper is used. Flushers follow after the streets are swept, washing any remaining dust into gutters and on through the catch-basins into the sewer.

The equipment used in street work comprises twelve trucks, one sweeper, and two flushers, besides many small tools for street cleaning. About 100 men are employed to take care of the street work. The cost for 1927 for street cleaning alone was approximately $50,000.

(Data furnished by W. F. Bechtold, Superintendent of Streets.)

Kansas City, Kansas

At the head of the Department of Street Cleaning in Kansas City there is a superintendent, and under him are the men that take care of the street cleaning and street flushing.

There are eight men with carts and horses, together with helpers for each one. In sewer flushing one regular gang of three men with a truck and hose are employed, together with an extra gang to put on in case of an emergency. There is also one flushing machine which is used on the main streets at night. The city allows the department $40,000 per year.

(Data furnished by W. E. Wilson, Chief Clerk, Department of Parks and Public Property.)

(To be continued in the June issue)

When Roadside Signs Are a Disgrace

THOMAS H. MACDONALD, Chief, U. S. Bureau of Public Roads, in his annual report, says of billboards:

"Designedly placed where they will receive the utmost attention, they frequently obscure or mar attractive roadside views and so detract from the pleasurable use of the highways. Accustomed as we are to their unwanted presence in ordinary surroundings, to come upon these blatant commercial appeals high on the face of a majestic cliff, marring a mountainside, or completely obscuring a particularly beautiful vista, awakens a sense of their utter incongruity. In practically all cases these roadside advertisements merely repeat in the same form appeals made quite properly through other agencies. Their disfigurement of the landscape is a national disgrace."

Liability of Cities and Villages in Maintaining Parks and Recreation Facilities

By GEORGE W. KNOX
Corporation Counsel, Niagara Falls, N. Y.

BECAUSE the courts of last resort of the various states do not agree on the definition of governmental functions of a city and as to whether or not the maintenance of playgrounds, parks, golf links, aviation fields, municipal skating-rinks and recreation generally are to be classed as such, it has become a grave question whether or not legislation should be invoked defining such functions.

Notwithstanding the fact that eminent law writers like Judge Cooley and others have very clearly discussed the difference between the governmental and municipal or private functions of a city, there exists in the minds of both the bench and bar the utmost confusion as to the class in which certain activities of cities belong; and many reformers and idealists, ignorant of the fact that there is such a classification of municipal activities, are urging our municipalities into undertakings on the plea of the advancement of mental, physical and moral well-being, without giving any consideration to the liabilities or evils which may attend these undertakings.

It is about time that our municipalities began going about these activities in a sensible instead of a hysterical way. As a matter of constitutional and common law, neither the state nor the municipality is liable for the malfeasance or misfeasance of its agents or servants in carrying on activities classified as governmental functions unless the legislature of the state has created a legal liability by statute; but in the exercise of municipal r private functions the corporation is legally liable for any negligence or tort committed by its officers, agents or servants in the discharge of their duties.

Private or Municipal Functions Versus State or Governmental Functions

Private or municipal functions include the collection of garbage, disposal of sewage, furnishing of water to the inhabitants, electric light, teaching of children, and procuring and regulating of like conveniences for the individual inhabitants of a municipality, which each may get for himself at a considerable cost and individual effort, but which may be obtained through cooperation and joint expense more efficiently and economically.

State or governmental functions include activities properly belonging to the state government, and in reality have no inherent part in municipal management, but are imposed by the state upon the municipality for administrative reasons. Among these activities are the maintenance of courts such as the police or municipal court, the care of public health, and safety, including the maintenance of the police, fire and health departments of the city. The activities which tend to promote the public health, well-being and happiness of those dwelling within the state include the maintenance of parks, playgrounds, gymnasia, free public baths and the like, and the means of transportation, such as the maintenance of streets, sidewalks and alleys.

The average citizen knows nothing about this classification of activities of his city, or their liabilities. Great confusion and uncertainty as to which class an activity may belong in, arises from the fact that the legislatures in many states have absorbed as a state activity what is properly a municipal function, the most conspicuous example of this being public education, a function which the legislature has usurped in many instances to the detriment of the rights of municipalities. On the other hand, the legislature has made municipalities liable for the maintenance of streets and sidewalks within the corporate limits, so that this has been held by some courts to be a private or municipal function.

Confusion in the Courts

There has been too much loose and careless thinking on the part of the courts in attempting to assign the activities of cities to one or the other of these two classifications, and in some states they will class an activity as governmental and in another state they will hold it to be private or municipal. This is true as to the maintenance of parks, playgrounds, gymnasia and other recreational activities in which our cities are beginning to engage extensively. Massachusetts, Connecticut, New Jersey, Illinois, Kansas, Washington and a majority of our states class the maintenance of parks under the head of governmental functions, and their courts hold that municipalities are not responsible for acts of negligence on the part of municipal employees, but that the employees are themselves personally responsible. On the other hand, the courts of Michigan, Missouri, and very recently the courts of the state of New York, have held that the maintenance of parks is a private or municipal function and therefore that the municipalities are liable for the negligence of the city employees therein.

If, as has recently been held by the Court of Appeals of the state of New York, a city has the same responsibility in maintaining a park that it has in maintaining a street, a great field of exploitation is opened up to the ambulance

If a Person Walking in a Park Trips Over a Wire, Who Is Liable?

If a park in a certain city is maintained by the state and a wire is carelessly placed in that park by an employee, a person walking in the park and tripping over the wire cannot recover against the state, but the employee is personally responsible. This rule is true as to cities in those states where parks are maintained by the cities and where the courts hold that such maintenance is a governmental function; but in those states where the courts hold that the maintenance of parks by a city is a private or municipal function, the employee of the city may be as careless as he pleases and goes scot-free.

The writer of the accompanying article points out the fact that advocates of public parks, playgrounds and gymnasia do not ordinarily give thought as to whether these activities belong in the class of governmental or private or municipal functions—and perhaps do not even know of the existence of such a classification. Nevertheless, they are urging cities to engage in these activities and the cities are responding to this urge without considering what they are getting into and without first invoking legislation to protect the rights of the taxpayer.

chasers and an unjust burden is imposed on the taxpayer. It is held in the state of New York that a depression of over three inches in a sidewalk renders the city liable; that a wire placed anywhere in the street so that one may trip over it entitles the person injured to recover a judgment. Apply these two rules of liability to a city maintaining a park, we will say of 300 acres, with its peculiar conditions, and then consider the liability. The New York State Court of Appeals holds that the state of New York, maintaining a free park in a city, is not liable for injury sustained by a person falling over a wire; but if the visitor goes across the street in the same city and falls over a wire in a like park maintained by the city for the same purpose the city must pay.

It would pay the officials and taxpayers in cities in those states where the courts think that maintaining parks is a municipal function to look around a bit and perhaps ask the legislature to do something about it.

EDITORIAL NOTE.—The writer of the foregoing article spoke on this subject before the Mayors' Conference of the State of New York and the New York State Forestry Association at their meetings in Albany, N. Y., in February last, and in those talks gave extensive reference to court decisions in various states. Readers desiring information as to those decisions can obtain copies in mimeographed form by applying to the author at the address given at the head of this article.

For comment on the article see Mr. Street's, following, and the editorial comment on page 17.

A Comment by the Editor of The American City's Department, "The City's Legal Rights and Duties"

IN urging legislation to fix municipal liability or non-liability, cities may do well to "watch their step." They might stir up adverse legislation, because there has been considerable criticism of the principle of making innocent—and often poor—people bear loss resulting from wrongful conduct on the part of city authorities. Isn't there much plausible ground for arguing that what a city negligently or willfully destroys, it ought to pay for?

As to the inclusion of aviation fields among the functions about which it is doubtful whether they are to be classed as governmental or private, I would say that the trend of decisions is distinctly to the effect that maintenance of airports is a public purpose, although so far as I know, no court of last resort has yet been called upon to determine the point of liability in maintaining such grounds. Three recent cases wherein the public purpose of an airport was recognized are briefly discussed at page 17 of THE AMERICAN CITY for March, and other relevant cases are mentioned in connection therewith.

A. L. H. STREET.

The 1929 Municipal Index
includes at pages 94-97 an index to legal decisions reported by A. L. H. Street in THE AMERICAN CITY during 1928.

The Folly of Land Overcrowding

AN intensity of land use which is not only socially unwise, but economically unsound, is accompanying the growing demand for apartment houses in our metropolitan suburbs and in cities, large and small, throughout the United States. That multi-family dwellings need, on the average, more open space around them for adequate light, air, recreation and automobile storage facilities, than do single-family dwellings, seems perfectly obvious; but, with a few notable exceptions, the cupidity or ignorance of speculative builders has brought the reverse of this condition to pass.

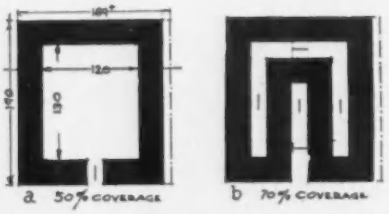
To the growing literature of protest on this subject there has now been added the March number of *The Architectural Record*, the principal feature of which is an elaborately illustrated discussion of The Modern Apartment House, by Henry Wright. Emphasizing the economic wisdom of a low land coverage when building and site are scientifically planned, Mr. Wright says:

It has been demonstrated rather conclusively that, given freedom of planning and using a standard of room sizes between 175 and 200 square feet of gross area, the greatest plan efficiency is reached with a span depth somewhere between 28 and 32 ft. For convenience, let us assume 30 ft. as the average "span" depth for satisfactory two-room-deep planning. Site "a" has an over-all size of 189.33 x 190 ft. (exactly 36,000 sq. ft.). If the span is 30 ft. and the building is extended to form a full square with one 20-foot opening to the court from the street and with a 10-foot side yard, the building will have an area of exactly 18,000 sq. ft. and will cover exactly 50 per cent of site. The interior court will be 119.33 x 130 ft., a size which for convenience we will call 120 x 130 ft., with an area of 15,600 sq. ft.

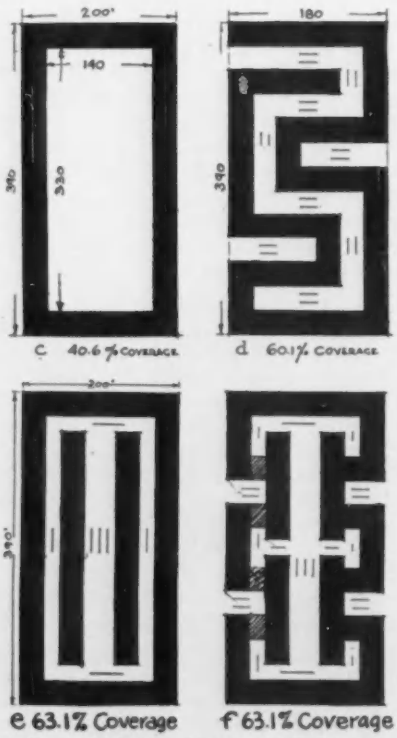
If inside this court of 15,600 sq. ft. we erect a U court building of similar 30-foot "span elements" (Fig. "b"), this structure will reduce the 130-foot court to three narrow light shafts, each 20 ft. wide. Thus we have added but 7,200 sq. ft. of building area or 40 per cent, have entirely destroyed all openness, yet have covered but 70 per cent, or 20 per cent more of the site.

It is therefore evident that for buildings of maximum plan efficiency, the range of land coverage lies between generous openness at 50 per cent and undesirable congestion at 70 per cent. This range of 20 per cent, even in non-elevator buildings of four or five stories, has a value of less than $100 per room in land costing $4 a square foot (or $400 a front foot, 100 ft. deep). The architect will hesitate to overcrowd his plan when he realizes that the maximum rent saving between Figs. "a" and "b" is only about $1 per room per month. In the next illustrations (Figs. "c" and "d"), we contrast on a site 200 x 390 ft. the full open court with a series of courts of 30 ft. exactly equal to the building depth. Again there is only a 20 per cent range.

As we are not advocating a design for a labyrinth, it will be advisable to study certain methods employed in large-scale schemes in order to increase coverage. If the amount of building area to be had in the definitely limited perimeter is insufficient for his requirements, the architect naturally undertakes to add to his space by breaking back or doubling his perimeter. In simplified terms he may place alongside the perimeter, and at a minimum distance, another tier of rooms as in Fig. "e". This increases the coverage from 40.6 per cent to 63.1 per cent and reduces the court width from 140 to 40 ft. The result, however, is a fairly open plan suitable for an apartment building of four to five stories. In order to provide access and practical arrangement, he must transfer certain parts, as in Fig. "f," which contains exactly the same building area. This we term the "Double Perimeter Plan."



The maximum rent saving between a and b is less than $1.00 per room, per month, with land costing $4.00 per square foot.



VARIOUS BLOCK PLANS SHOWING DISPROPORTIONATE LOSS OF OPENNESS AS PERCENT OF COVERAGE IS INCREASED

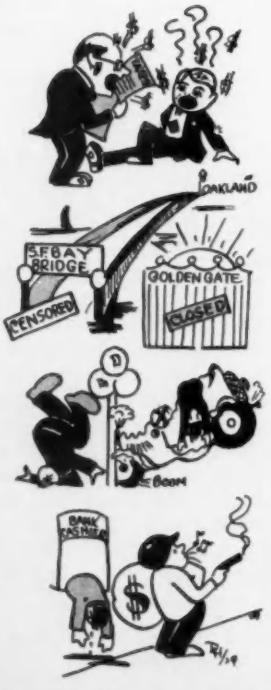
Inefficiencies Offset Savings in Land Cost

Now, unless the architect watches his procedure very carefully, he is likely to run into plan complications and inefficiencies which will almost, if not fully, counterbalance his saving in land cost. There seems to be no valid reason for crowding the land and reducing interior courts other than that of reducing the combined cost of building and land per room or apartment. Let us compare the simple open plan (Fig. "e") with the double perimeter plan (Fig. "f"). In Fig. "e" a room of 160 sq. ft. gross area in a five-story building will require 160 ÷ 5 ÷ .406, or 78 sq. ft. of land, which at $3 per foot is $234. If in complicating the plan as in Fig. "f" it requires 170 sq. ft. of gross area for the same net size rooms (due to irregularities in the plan and considerable losses on the first floor for access to the interior parts of the building) the amount of land required in Fig. "f" will be 170 ÷ 5 ÷ .631, or 53.88 sq. ft., which at $3.00 per foot is $161. The saving in land, therefore, is $73 per room. But there is 10 x 11.4 ft., that is, 114 cu. ft. more of building cubage to build, which at 50 cents would cost $57 more per room. It is very doubtful, therefore, whether the remaining difference of $16 per room would pay for the added complications of plan in the double perimeter scheme.

The study of numerous examples where losses in plan efficiency have been caused by an effort to increase ground coverage leads to the assertion that *all complicated plan forms suffer through plan inefficiency and added building cost to a degree that is seldom recaptured by increased ground coverage or overcrowding, even on land of comparatively high value.* It is probable that such plans as Monroe Court (see illustration), which have been casually criticized as being wasteful of land because of their very large inner courts, are in fact among the most efficient and most economically well-balanced buildings to be found.

INTERIOR VIEW OF MONROE COURT, SUNNYSIDE GARDENS, L. I.
The courtyard is 130 feet square, although the building covers 49 per cent of the plot, which is 190 by 205 feet. It is an unusual example of simple perimeter planning, and also illustrates the fallacy of overcrowding the land. The architect was Clarence S. Stein

The Troubles of a Mayor as Rhythmically Portrayed in the "Municipal Employee", of San Francisco



Blame the Mayor!

Words by HERB B. GEE

Decorations by DON HURD

If you're "stuck up" with a gun,
Blame the Mayor!
If the street cars do not run,
Blame the Mayor!
If your sewer is not laid
If your taxes are not paid,
If the trees give off no shade,
Blame the Mayor!

If you're sore at all mankind,
Blame the Mayor!
If your pants are patched behind,
Blame the Mayor!
If the motorists all speed
And no traffic signs they heed—
Wrecking humans 'til they bleed—
Blame the Mayor!

If the street lamps do not light,
Blame the Mayor!
If the crossings are a fright,
Blame the Mayor!
If the water mains run dry,
Don't give forth a lusty cry—
Step right up and black the eye
Of the Mayor!

If the weeds grow in your lawn,
Blame the Mayor!
If your savings cash is gone,
Blame the Mayor!
If your Jersey cow dries up,
If you lose your pointer pup,
Do not drop tears in a cup—
Blame the Mayor!

If we never bridge the bay,
Blame the Mayor!
If it rains 'most ev'ry day,
Blame the Mayor!
If your false teeth break in two
So that food you cannot chew,
There is just one thing to do—
Blame the Mayor!

If your hens refuse to lay,
Blame the Mayor!
If you fail to draw your pay,
Blame the Mayor!
If the streets all need new pave,
If your soul you cannot save,
Do not spout and rant and rave—
Blame the Mayor!

If bootleggers ne'er are fined,
Blame the Mayor!
If the "cops" are never kind,
Blame the Mayor!
If the poison that you drink
Puts your thinktank on the blink—
Makes your feet a skating rink—
Blame the Mayor!

If in gratitude you lack,
Blame the Mayor!
And your civic duties slack,
Blame the Mayor!
If this City—by—the—Gate
Has a fame both wide and great;
Equaled nowhere—in no state—
BLAME THE MAYOR!!

A Plan for Remedying Evil Conditions in Local Penal Institutions

By LOUIS N. ROBINSON

Secretary, National Crime Commission's Sub-Committee on Pardons, Parole, Probation, Penal Laws and Institutional Correction

THE plan which we offer for the remedying of this evil situation now existing in most institutions for short-term offenders is of a two-fold character. It involves, on the one hand, a strengthening of state control and, on the other, a building-up of county and municipal administrative machinery. We wish to make it clear that this is not an "either or" proposition but a unified plan, all parts of which should be developed as nearly simultaneously as is possible.

The first point which we wish to make is that it is not necessary to commit so many to these local institutions. Of the 319,908 individuals committed in 1923 (the latest period covered by the reports of the Bureau of the Census on Prisoners) over half—namely, 169,231 were committed for non-payment of fine. This, we submit, is an injustice, being a penalty for the incident of poverty. It is essential that each court, county or municipality create the machinery for collecting fines by installments. We do not believe that this is a task for probation officers, although there should be close cooperation between the probation officers and collectors. If even one-half of those now committed for the non-payment of fines could be handled by collection agencies, it would mean a reduction in jail commitments of 84,615 each year.

But this is not all that can be done. As we have pointed out, 10.6 per cent of those who were sentenced to imprisonment or to imprisonment and fine received sentences *of less than ten days' duration,* a total of 15,972. In our opinion, a properly developed system of probation would have cared for at least half of these. Thus we see how the load of these local prisons can be lightened to the extent of 92,601, or 28 per cent, through the building up of collection and probation agencies.

It may be argued that too many offenders are placed on probation as it is. If by that is meant that our present poorly developed, badly financed and in many places politically dominated probation organization is unable to do the work now given it, we will at once agree. Our plan, however, is based on the assumption that we can, if we will, develop in each local community a probation organization that can do more for these ten-day prisoners than a jail or a prison of any kind ever will be able to do. Does it not, moreover, seem reasonable to believe that downright social service to these short-term prisoners extended over a period of time, three months or a year, will in the end constitute a better protection to society than placing them behind the bars for ten days or less? It is probably true that some who are now placed on probation ought to be committed to institutions. We believe, however, that this proper addition to the institutional group would be easily offset by the development of probation in areas where it is now practically unknown.

Jails and Workhouses as Crime Breeders

were discussed by Dr. Robinson in this magazine last month, in an article of which the concluding installment is here published. The two articles comprise most of a report submitted in February, 1929, to the National Crime Commission by Dr. Robinson as Secretary of the Sub-Committee on Pardons, Parole, Probation, Penal Laws and Institutional Correction.

Some may argue that the lack of education and training and the poor physical condition of these individuals committed to jails and other local institutions is a sufficient excuse for retaining all of the short ten-day prisoners and even for holding those whose only reason for being in prison is their inability to pay a fine. This we do not believe is a valid argument. Care and training should not, and of course are not, to be had only in penal and correctional institutions. Social workers do not take their cases to prison when in need of education, training or medical attention.

We admit that this part of the program depends on our ability to develop satisfactory collection and probation agencies. But it must be clearly recognized that any change for the better, whether institutional or non-institutional, calls for a higher and more efficient type of public service than we now have. It seems, therefore, but common sense to make the attempt in the direction which other responsible agencies have found successful in dealing with other groups of society's misfit.

State Care of Institutional Cases

State care of all convicted misdemeanants in need of institutional treatment is, as has been implied, the second essential part of our plan. In dealing with long-term offenders and with adults, and with juveniles too, for whom reformatory treatment is advisable, the states have already recognized their responsibility and built state prisons, state penitentiaries, adult and juvenile reformatories. The care of misdemeant prisoners is, in our opinion, also a state responsibility and should not be left to the counties and municipalities.

What to Do with the Present Jails, Workhouses, Etc.

All workhouses and houses of correction that are suitable for the purpose should be taken over by the state and continued as units in the state system for misdemeanants. The same should be done with the few modern jails which are capable of being incorporated in the state plan. In the main, however, jails should be used solely as houses of detention for adult prisoners awaiting trial. They already serve this purpose, and it is not, therefore, a new task for them but a proposal that they concentrate their entire energies on it. The removal of sentenced prisoners would eliminate the overcrowding which in spite of the small average population is often a present evil. Although work should be offered untried prisoners, there is not the necessity of providing for them well-developed workshops and systems of industrial training. There is therefore a real possibility that the counties and the municipalities could handle this simplified proposition with a fair measure of success, assuming, of course, that the state supplied skilled advice and maintained rigid supervision. Their task could be made still easier if the courts could be prevailed upon to hold more frequent sessions and thus prevent the imprisonment of individuals often for months before their guilt or innocence has been determined.

What Should Determine the Type of Institutions

Before making any suggestions as to

the type of institutions which the states should erect for the care of misdemeanant prisoners, we wish to point out that common sense dictates that the character of these institutions should depend wholly on the nature of the misdemeanants. *We are too prone to devise an institution which fits our abstract notion of punishment instead of one which is suitable to deal with the human beings whom we commit to it.* We would therefore suggest that each state study its misdemeanant group thoroughly before completing its final plan for their care. It is not, however, necessary to delay all action until such a survey is carried out, since enough is known for investigations already made to warrant immediate action.

The Industrial Farm Colony

The type of institution which will undoubtedly fit the greatest number of misdemeanants is the industrial farm. By this we mean an institution located on a large tract of land but equipped with workshops and workrooms for trade instruction and the employment of those for whom farm work is not suitable. Such an institution should not be of the old monumental type with every cell of tool-proof construction. Simple, substantial buildings with cells or rooms built more with an eye of sanitation than to security are all that are needed. In Europe, such institutions are to be found at Merxplas, Beligum; Veenhuizen, Holland, and Witzwil, Switzerland. Indiana has an institution of this kind at Putnamville; Massachusetts at Bridgewater, and the District of Columbia at Occoquan, Va.

For normal and borderline individuals, and for many probably of the psychopathic group, institutions of the character here outlined are equally suitable. An industrial farm institution is sufficiently flexible to make an adjustment in work and training easily possible for the groups indicated. Precaution should be taken, however, to insure that these institutions are not built on too large a scale. Five hundred inmates are as many as one superintendent can successfuly deal with. Mass imprisonment is a danger carefully to be avoided.

Existing State Institutions Should Be Used

Among the misdemeanant group, are some who should be committed direct to state hospitals for the insane, others who should go to colonies for the epileptics and the feeble-minded. Their crimes are but manifestations of their mental or diseased condition and confinement in any prison can but aggravate their trouble. This branding of sick people as criminals should stop. It is as crude a superstition as the burning of witches. We do not mean to imply that all misdemeanants are insane, feeble-minded or epileptic; but every study of this group of offenders has revealed the existence of a goodly number of these. Their place is in state hospitals which are equipped to handle these cases.

New Types of Institutions and New Forms of Treatment Needed

As the attempt has never been made in any state to deal scientifically with all the various classes of misdemeanants, it is impossible for this committee to say now what should be the character of each and every institution or what form of treatment is desirable for each class. New York has developed an institution at Napanoch for defective delinquents. Pennsylvania has also legislated with that end in view. It may be that there are defectives whose acts are so vicious or whose conduct is so difficult that they must be placed in an institution by themselves. Scientists, moreover, are not yet prepared to lay down definite plans for dealing with psychopathic individuals who commit crimes. The New York survey pointed out that some of these are proper patients for hospitals for mental disease, some would profit greatly by vocational training and some are in need of a combination of psychiatric and social treatment. This is probably about all that can now be said concerning this difficult group of offenders. We do not know more because we have not tried to find out.

The Woman Question

Among prison authorities it is axiomatic that no woman should be committed to a penal institution mainly or even partly populated by males. Women should have an institution of their own, but this does not mean that everything about the institution should be different from those given over to men. Men and women offenders of the same type need about the same treatment. As a matter of fact, the most successful institutions for women of which we have knowledge are of the industrial farm type. We therefore offer no plan for dealing with women misdemeanants as such other than to insist that they be placed in separate penal institutions wherever this is possible, entirely under the care of women.

The Form of Sentence

Assuming now that state industrial farms are established, what should be the form of sentence? In our opinion, this should vary with the type of offender. A wholly indeterminate sentence, with no minimum or maximum provisions, should be given to defective delinquents and to psychopathic individuals. Drunks and vagrants should also be given indeterminate sentences, though a maximum provision could well be inserted in the sentence providing it allowed for a period sufficiently long either to insure a cure or to develop habits of work. Definite sentences probably will still be found necessary for many of those who are regarded as normal individuals, but extremely short sentences should be avoided. Probation or fine, collected if necessary by installments, will be found far more efficacious. If a state should establish institutions for all the various groups of misdemeanants, then commitment to a certain institution would carry with it automatically the sentence found most advantageous in dealing with the specific group which it handles. A judge should then be given power to commit individuals to any one of these institutions. However, in a state which has provided only one or two unspecialized institutions, the law should make it possible for a judge to impose either a definite sentence, an indeterminate sentence with a maximum, or a wholly indeterminate sentence, depending on the type of offender, even though he sends all misdemeanants tried in his court to the same institution.

These brief suggestions as to sentence will seem neither radical nor strange, once we have turned from the antiquated theory of equating crime with pain to the common-sense notion of protecting society.

How to Begin

It is well to recognize certain difficulties in the way of a realization of this program. To build state institutions *de novo* sufficient to care for all misdemeanants costs more money than many of the states are now willing to put up, and for the state to take over the county jails would probably produce a roar of protest due to the disturbance of local political machinery which this move would no doubt cause. It is very doubtful, too, if there is now a single state which contains enough decent jails to form the foundation for a state system. In other words, the time is not now ripe to do as England did. We must, perhaps, wait until some of the more intelligent communities have constructed institutions worth taking over by the state.

One could go about the substitution of state institutions for local institutions in one of several ways. Indiana has established a state farm for all misdemeanants receiving a sentence of over thirty days. Massachusets, on the other hand, seems to have started on the policy of developing at Bridgewater a state institution for selected classes of misdemeanants. Neither state, we note, has entirely eliminated the use of local institutions for sentenced prisoners, but a

beginning has been made that is decidedly worth while.

Our first suggestion, then, is that if a state cannot afford to embark on the policy of creating a sufficient number of institutions to care for all misdemeanant prisoners, it should establish one for a selected group, making the selection not according to the crime, nor the length of sentence, but preferably on the basis of personality. A state institution could be established for the feeble-minded, or for the psychopathic group, or for the vagrants and tramps.

Our second suggestion is that the individual states be given more power over existing local institutions. Specifically, we would urge that each state enact legislation that would give to some state department, board or commission with respect to jails, houses of correction, workhouses, road camps, etc., the powers enumerated below.

a. To inspect and make public its findings.

b. To require uniform accounting and the making of prescribed reports.

c. To compel local authorities, whether county or municipal, to submit for approval all plans for new institutions, including location, or for the alteration of old ones.

d. To prescribe a régime, not necessarily uniform for all institutions, covering food, clothing, exercise, work and cellular accommodations.

e. To transfer prisoners from one institution to another at the expense of the local unit where the prisoner or prisoners were first incarcerated.

f. To close an institution on account of inability to maintain a reasonable régime.

g. To develop specialized local institutions through exercising the power of transfer.

We have yet to find a single state which now has all the powers enumerated in the preceding paragraphs. Some have none. Of the forty-eight states, thirty-two now have the right to inspect local institutions and to make public their findings. However, the power to make inspections and to publish reports is rendered almost futile by the complete lack, in all but a handful of the states, of authority to lay down a definite jail régime and to require certain standards of care in the treatment of prisoners. Our State Boards of Charities and Correction, Departments of Welfare and other boards or commissions which look after these local institutions have been entirely too modest in requesting legislatures for power. These state agencies must furnish expert leadership and guidance, and to do so, must be given a fair measure of that control which our investigations show they do not now possess.

Our policy with respect to these local institutions is, we freely admit, opportunistic. If state finances permit the building of specialized state institutions for the care of all misdemeanants, well and good. This will drain the convicted side of the jail, but the extension of state control over the local institutions would still be necessary for the protection of the untried. If a county or municipality decides to build a modern penal institution for its own use, first obtaining the approval of the state as to plans and location, then this should be encouraged. We may rest assured that all counties and municipalities will not do this. The new institutions that are built can be taken over later by the state and made units of a state system. They will themselves be the incentive for this, as in all probability neighboring counties will wish to send their prisoners there instead of building a new institution of their own.

State institutions for all misdemeanants are, however, the goal, and the quicker we attain it, the less will our reputation for efficiency and common sense suffer.

City and County Regulation of Aircraft

SINCE many states have been slow to enact legislation forcing all aircraft and airmen operating within their borders to conform to the Federal requirements for those engaging in interstate air traffic, the Aeronautics Branch of the Department of Commerce believes that cities and counties might well pass such regulations.

As a stimulus to this movement, the Department suggested the following uniform city or county ordinance in a recent issue of its aeronautical bulletin, "Domestic Air News." Sections 1 and 3 are similar to the uniform state laws already proposed by the Department of Commerce.

Suggested Uniform City or County Ordinance

An ordinance to require the licensing of aircraft and airmen operating over the ..... of .....

Section 1. Be it ordained by the ..... of the ..... of ....., that on and after the first day of ....., 192 , only aircraft and airmen licensed by the Secretary of Commerce of the United States shall be permitted to operate in or over the ..... of .....; provided, however, that this restriction shall not apply to public aircraft of the Federal Government or of a state, territory, or possession, or of a political subdivision thereof.

Section 2. No airport or landing field shall be established, maintained, or operated for commercial purposes within the jurisdiction of this ..... except such airports, or landing fields as meet at least the requirements of the Airport Rating Regulations and amendments thereto, promulgated by the Secretary of Commerce of the United States, for the rating of D 4 X.

Section 3. Any person violating the provisions of this ordinance shall upon conviction be found guilty of a misdemeanor and subject to a fine of not more than ..... dollars or imprisonment for not more than ..... days, or to both such fine and imprisonment.

In addition to these fundamental safety measures which may properly be required by law, there are numerous other rules which may be classified as field rules, to be observed in the interest of safe and orderly operation of the airport, the Department adds. It is expected that the individual airport usually will adopt these rules but some of them may not entirely apply and will require revision in certain respects, while there may be additional rules affected by local conditions which will have to be included.

These field rules are divided by the Department into: general rules; flying rules; rules regarding running engines; rules regarding instruction flying, test flying, etc.; rules regarding parking area, dead line, etc.; and fire regulations. The fire regulations are based on the requirements of the National board of Fire Underwriters.

General Field Rules

The Department suggests the following outline of field regulations under the head of General Rules:

1. All visiting pilots landing on the airport shall report immediately to the administration office to register complete information about plane, cargo, passengers, etc.

2. Immediately prior to his departure, each visiting pilot shall report to the administration office and check out.

3. The airport will be open to render service .....

4. Lighting of the port for night flying will be done in accordance with the requirements of the United States Department of Commerce for a ..... rating on night lighting equipment, etc.

5. Handling of the public in attendance at the airport will be at all times under the control of the field manager.

6. Unhoused aircraft shall be parked in the space allotted therefor and shall be firmly secured to the ground by ropes and stakes or otherwise, when left unattended overnight or during bad weather conditions, etc.

7. Wrecked aircraft and the parts thereof shall be promptly removed from the landing area.

8. Payment for storage, repairs, supplies, etc., shall be made before clearance will be granted, unless other satisfactory arrangements have been made.

9. No person, firm or corporation shall engage in the sale of refreshments or any other commodity, or service within the confines of the airport without previously having obtained from ..... a permit to do so and having paid, or made satisfactory arrangements to pay, such fees or other sums or money as the said ..... may determine for such privilege.

10. Any parts of the landing area temporarily unsafe for landing, or which are not available for any cause, will be clearly marked, etc. In case the airport is lighted for night operation, the boundary of such dangerous area will be clearly marked throughout the night, etc.

The Department lists also the suggested flying rules, instruction flying and test flying requirements, parking area and dead line, etc., and fire regulations. The Domestic Air News, No. 48, contains this entire outline and may be obtained by writing to the Aeronautics Branch of the Department of Commerce.

Highway Service for Modern Traffic

By GEORGE E. MARTIN

MEETING the demands of the traveling public for highway service without unduly irritating the pocketbook nerve of the taxpayer is no simple problem for the road official. A stretch of bad highway brings a storm of protest and solicitation by word of mouth, by letter and through the press, for its improvement. The result is about the same whether the road official be in charge of a town, city or county, or state highway system. We all react about the same way to a rough, bumpy, interruption to our desire to get from here to there by the shortest possible route. We want it fixed and we want it fixed right now.

Unfortunately, even the best of roads do wear out and it is not much wonder that they do. Few things must give continuous service under such a number and variety of destructive forces. The road is literally out in the open, subjected to wide variations in temperature, to lashing rains, to freezing sleet and snow, and in addition the tearing action of rapidly moving wheels and the crushing weight of heavy loads.

When a section of highway begins to show signs of distress under this continual pounding, what is to be done about it? The simplest solution is to throw the old road away and build a new one which is designed, to the best of our ability, in the light of our present knowledge, to adequately resist these destructive forces. That may also be the best solution. In many cases it is. A wealthy, well-built-up road district, with practically unlimited funds, can proceed on that plan and always have a large percentage of comparatively new roads in its system.

Most communities cannot afford to entirely replace every weak link in their existing highway system.

BUILDING A TAR PENETRATION MACADAM OVER OLD MACADAM IN RYE, N. Y.

Assuming then that an effort is to be made to salvage the old road, a choice of methods to be used is open to the engineer. In most cases it will be found that local materials can be used and a good job done quickly and economically.

The tabulation below presents a number of solutions for the problem of conserving the value of an old pavement and producing a new satisfactory traffic-way:

Old Road	Solution
Gravel	Re-tread top Penetration macadam top Bituminous concrete top
Macadam	New stone top Re-tread top Penetration macadam top Bituminous concrete top
Penetration macadam	Surface treatment Re-tread top Penetration macadam top Bituminous concrete top
Bituminous concrete	Surface treatment Surface replacement
Cement concrete	Surface treatment. Re-tread top Penetration macadam top Bituminous concrete top
Brick	Surface treatment Re-tread top Penetration macadam top Bituminous concrete top Turning brick

A GRAVEL ROAD IN FAIRPORT, MONROE COUNTY, N. Y., TREATED WITH TARVIA B

Gravel

There is an enormous existing mileage of gravel streets in practically all sections of the United States. In most localities a gravel surface is the next logical step above the unimproved earth street.

Untreated gravel makes an excellent foundation and, except for the dust, is a satisfactory surface for light traffic streets. The dust can be entirely eliminated by a surface treatment with a type of bituminous material which will penetrate into the surface and bind the particles together, forming a hardened crust. Approximately ½-gallon per square yard is used and covered with coarse sand or fine gravel. Many cities now maintain their residence streets in this way.

An easy and satisfactory way to strengthen a gravel street is to add a re-tread top. This re-tread top is a mixed-in-place combination of stone and tar about 2 inches thick. It forms an easy riding surface at a very low cost. Only slightly over a gallon of bituminous material per square yard is required for the 2-inch top, and the only machinery necessary is a grader or maintainer and a road roller.

Gravel streets which have been surface-treated and consolidated under traffic form excellent foundations for penetration macadam or bituminous concrete tops constructed by standard methods. The bituminous concrete may be made

in a plant and laid hot or may be a hot mix that is laid cold.

Macadam

Many cities possess a considerable yardage of waterbound macadam, which is usually maintained with bituminous surface treatments. Such streets will carry more traffic than is ordinarily supposed, counts having been taken showing well over a thousand light vehicles per day in many cases.

New waterbound macadam streets are being built in parts of the country where suitable stone can be economically obtained.

A street of this sort which shows signs of distress under traffic can be scarified and rolled back into place after adding new stone. The street is then treated with bituminous material, as in the case of a new street.

New tops may be added to the old street, as described under gravel.

Penetration Macadam

If the penetration macadam street is only failing on the surface and not because of serious foundation trouble, it can be salvaged by an ordinary surface treatment with bituminous material. This is really more a maintenance than a salvaging operation.

A penetration macadam surface which is pushed out of shape on account of weak foundation may be smoothed up and strengthened by the addition of one of the bituminous tops described under gravel.

Bituminous Concrete

A bituminous concrete surface that is cracked or checked can be healed by a surface treatment of proper bituminous material.

In some instances the surface may have disintegrated to such an extent that it is advisable to remove it from the foundation and replace it with a new top.

Cement Concrete

Cement concrete pavements that fail usually do so by the disintegration or wearing-away of the surface or by the breaking-up of the slabs, or both.

Surface disintegration, if caught in time, may be cured by the surface application of a bitumen which will penetrate into the concrete and bind the particles together. If this is followed by the application of a somewhat heavier bitumen that will hold fairly large cover material, a thin mat will be formed which will carry the traffic in good shape.

Sections of concrete that are badly shattered must be removed and replaced with penetration macadam or bituminous or cement concrete.

New tops as described under gravel may be used to smooth up and strengthen old concrete pavements.

Brick

Brick surfaces that are only slightly rough may be smoothed up with standard bituminous surface treatments. Such a treatment, however, will not remove major irregularities.

Any of the bituminous tops described under gravel can be used in the same way over brick. Such a top over an old brick surface will give a quiet, easy-riding surface which will satisfactorily carry heavy traffic.

Several cities have turned and relaid the brick in some of their old streets. Where a bituminous filler is used, this can be done, although it may be cheaper to add a new top where there is sufficient room to do so.

Conclusion

Conserving the enormous sums invested in existing road and street surfaces is a worth-while job. It is oftener easier to throw away the old material and start over, but in most cases that is not the most economical solution. Recent improvements in the methods of building new tops make it possible to do better work at less cost than ever before.

Curing Concrete Streets in Bogota, N. J.

By RUDOLPH SCHWEIZER, JR.
BOROUGH ENGINEER, BOGOTA, N. J.

CALCIUM chloride was used as a curing agent in place of straw covering to cure completed concrete pavements in Bogota, N. J., during the latter part of 1928. The calcium chloride was intended to perform the same function as the straw covering, namely, to retard the drying-out of the surface and to permit the concrete to cure slowly. At no time in Bogota has calcium chloride been used as an ingredient in concrete to shorten the curing period.

Disadvantages of Straw Covering

The change from straw covering to calcium chloride was made because the latter seemed cleaner, did away with the necessity of constantly keeping the straw covering wet and reduced the danger of fire due to accidental ignition of the straw covering. The necessity of keeping the straw wet has always been a source of trouble, as it required constant attention on the part of the inspector to get the contractor's men to perform this part of the work.

It is doubtful that the use of calcium chloride will be continued in the future, not, however, because of any failure of this material to perform its proper function. We found that by not covering the surface of the finished work with straw, we were unable to keep the street closed to traffic entirely. With the street clean and inviting, the barricades were constantly being moved and traffic was using the streets as soon as the contractor had left the work.

Danger of Premature Use

To my mind the danger to concrete pavement from premature use is a far more serious objection than all those raised against the straw covering. With the straw covering and occasional timbers and planking left on the street till the curing period is over, very few attempts are made to use the street until it is formally opened. Another objection is that, in the case of our streets, the contractor found it necessary to come back in several instances and lay sidewalk, with the result that concrete was spilled on the new work, making parts of the street rough and unsightly. If straw covering had been used, scarcely any of this spilled concrete would have adhered to the new pavement and, when finally cleaned by the contractor, prior to turning it over to the borough, the street would have been much cleaner.

As an ingredient of concrete to shorten the period of curing I can see the value of this material and possibly the additional cost would be more than offset by the added convenience to the people living on the street under improvement. This is being given consideration for work in 1929, but it is believed that the use of calcium chloride as a surface treatment will be discontinued because of the reasons mentioned above.

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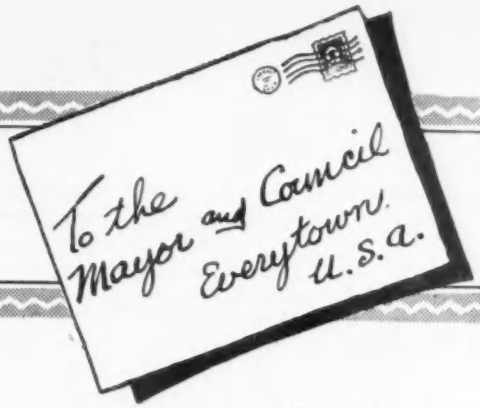
A MONTHLY OPEN LETTER



April 1, 1929

Honorable Sirs:

THE employees of a city are the teeth on the gears of the municipal machine. If unwise handling allows them to become worn or broken off; if a near-sighted economy causes them to be geared too tightly; if through a lack of coordination they do not properly mesh, the whole machine will falter and jerk, its operating ratio will be low, and at critical moments it may stall entirely.

There are some problems so difficult and exhausting that they should not be undertaken except with vigor and determination. Such a problem is the matter of municipal salaries and working conditions. Perhaps you hesitate to shoulder such a task, but can you think of anything more worthy of your attention and more likely to improve the quality of the service you are seeking to render?

IN the first place, are you still cherishing the notion that the public is afraid to pay adequate salaries? It was twenty years ago. Perhaps it still is in rural communities where the farmer gets a good part of his living from his farm and imagines that $1,500 a year would be a princely income—as it would be to the average farmer if he continued also to get his living from his farm. In our cities, however, the war and changing price levels that a few years ago we were calling "the high cost of living," caused our people to give more thought to the purchasing power of incomes. Don't let anybody tell you that the public is not appreciative of the need and fairness of adequate salaries.

The safest and surest standard for public salaries is to pay what the equivalent services would command in private employ. This is, of course, more than generous, because public work is accompanied by less pressure, more generous vacations—perhaps—and frequently by pension provisions, all of which amount to a real addition to wages. Starting then with prevailing commercial scales, you may discover that, because of the chaotic increases that came with the war era, some are actually overpaid. The answer is simple—increase standards. You are even more likely to discover that, while the numerous employees in the lower ranks have been heard along with the prominent department heads, there is an important group of responsible subordinates, chief and supervising clerks and managing deputies, who have been overlooked. These are the foundations on which the whole dome of administration rests. Not numerous, they are everywhere the most important group in public employ. They are the most nearly indispensable group in any structure. Their superiors and their subordinates could more readily be replaced. These are the wheels about which the work of government revolves.

HARDLY less important than a wage fair to the individual is a wage fair as among individuals. This has come to be called "classification and standardization." In some places these terms are in disrepute through unintelligent application. But the principle is simple. Titles should describe one's work. Work in different divisions or departments requiring equivalent effort and experience should receive equal compensation. This is not only simple justice; once established, it is the surest safeguard against petty jealousies and grudges that do so much to destroy morale.

With this should go a pension plan. An employees' pension system serves two purposes. It improves the morale of public service by assuring the future of those who devote themselves to it. On the other hand, it improves the service by removing those whose efficiency has begun to decline. If it is not actually cheaper in dollars to remove the superannuated employee at half-pay and replace him by a less highly priced younger person, the superior efficiency of the latter more than compensates for the increased monetary cost. To this may be added the improved spirit of the force which the prospect of promotion creates. Nothing is more discouraging than the thought of having to wait until the old fellows die off. Business is realizing these things. As it abandons the policy of dropping those whose efficiency age has impaired, it is finding it more and more necessary and profitable to institute systems of retirement. If it's good for business, it's good business for your city.

Failure to provide a pension system is no economy. As old age overtakes those who have served well in the past, it is unthinkable to turn them out. There are, therefore, only two alternatives: to keep them at wages they can no longer earn and in jobs they can no longer fill, or to pay them pensions to which they have made no contribution. Provision for old age is not solely the employer's responsibility. The worker, himself, should have enough pride to want to make this provision.

ONE final matter merits consideration in this connection, and that is vacations. They are more than a habit, they are a necessity. And, again, the practice of private business in your community furnishes you with a starting point. Your vacation policy, like your pension system, should be based on sound business principles.

And this might well be the keynote of your whole treatment of the personnel problem. Laxity and unwise generosity earn no gratitude or respect. Yours is a trusteeship for the public. There is no generosity in wasting other people's money, and in the end it defeats itself. Your employees are entitled to a fair application of current standards. You will find that they ask nothing more.

Yours cooperatively,

HINTSAND POINTERS.

Mechanical Budgetary Control Accounting: The Department of Accounts

The Second of a Series of Articles on This System of Accounting, As Applied to Municipalities and Other Public Bodies, Which Began in April

By GEORGE G. SCOTT, C. P. A
CHARLOTTE, N. C.

THE plan of organization for municipal corporations and other political divisions of government, is largely patterned after the Federal and English system of government, with diffusion of the functions of accounting in the organized scheme of the departmentalization of activities.

Under such methods, for example, the accounting function of tax collecting follows the office of tax collector; the accounting functions of the utilities are likewise under the office of the utilities, and so on through all the other departments and major activities of government.

A Separate Accounting Department Is Needed

Considerable progress has been made, especially in our larger cities, in establishing general control accounts in the office of the comptroller or auditor, for the purpose of centralizing the general budget and financial information. However, there has not been great progress made in creating a separate and independent department of accounts, with a scientific coordination and centralization of the functions of accounting of the different departments and activities of government.

It should be understood in the first place, that the accounting of a municipal government or any other political division, represents an important major division or department of administration that requires to be separately organized and independently supervised as a major department of the organized government.

Functions and Ledgers

The department of accounts includes at least nine important functions, which are as follows:

1. Auditing
2. Billing
3. Collecting
4. Payrolls and time keeping
5. Vouchering
6. Costing and statistics
7. Mailing and filing
8. Reporting
9. Account keeping

The complete accounts required for all detail and control information may be divided into the following named divisions:

1. Budget Ledger
2. Expense Ledger
3. Revenue Ledger
4. Motor Transport Ledger
5. Special Funds Ledger
6. Capital Ledger
7. General Control Ledger

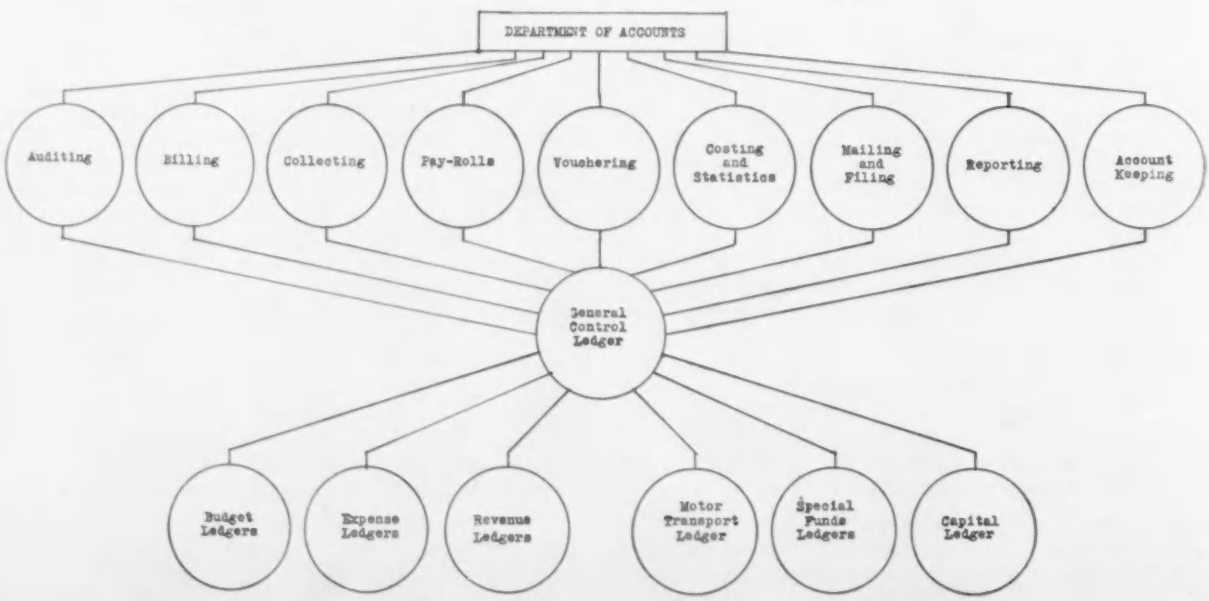
The following delineated chart of the department of accounts presents a picture of the grouping of the functions and the divisions of accounts, which shows the relationship of the factors that make up the centralized department of accounting:

The chart shows nine functions that make up the department of accounts, consisting of seven ledger divisions, which may vary according to the requirements or the laws governing the organization of the government.

The important functions of accounting should not be diffused and scattered around among the departments and activities, but instead they should be centralized in order to perfect a satisfactory coordinated control.

Auditing, Billing and Collecting

The function of auditing, for example, should be centralized and is usually maintained as a centralized function. The function of billing may be diffused and scattered among the departments in many cases. The plan requires the billing function to be centralized, as it does with all other functions of accounting. The tax bills, street assessment bills, utility bills, the bills for licenses, fees, permits; in fact, all bills representing revenues to be collected, are first prepared by the billing function of the department of accounts. Under this system, no collection is made covering any character of revenues, except by and through invoices or bills that are prepared by the billing function.



The next function shown in the chart is the collecting function, which is also centralized and known as the "Centralized Cashiers" to whom all payments are made in accordance with the predetermined amounts shown by the official bills or invoices that have been prepared by the billing function. The cashiers do not handle books. Their duties are confined to the work of making collections of taxes, utility bills, licenses, fees and other character of revenues, and at the close of the day to prepare a daily report of their collections, a copy of which is transmitted to the department of accounts. Under this plan the tax office does not collect taxes, the utility department does not handle money, nor does any other department perform the function of collecting.

From departmental daily reports, the billing function prepares the bills or invoices to be collected and they are turned over to the centralized mailing function to be delivered to payees, and they settle with the cashiers in accordance with these official bills, whether it is for taxes, street assessments or utility charges. In the case of licenses, fees, permits, and similar revenue, the bills are made up from applications and are paid at the time of preparation and do not go out through the mailing function.

The centralized cashier plan and centralized billing, wherever it has been adopted, has received the highest character of approval.

It carries peculiar advantages, in that it preserves the internal check, based upon the theory that the same department should not both create and liquidate its own charges. The plan involves considerably less clerical work and is therefore more economical; besides, it is a more orderly method of handling the work and conducting the business of the government. The plan is an important link in the chain of coordination, which simplifies the work of the other functions by the orderly organized method of handling the transactions that enter into the books of account.

Other Functions

Another important function that is centralized under the mechanical budgetary control system, is the preparation of payrolls and time keeping. This function should not be divided among the various departments and activities of the city. The centralization of this function and adoption of the payroll system of paying by checks, includes a special bank account for payrolls, and with modern payroll machinery the clerical work is materially reduced.

Vouchering is another function of the department of accounts that requires very little argument to show that it should be centralized. The vouchering should not be scattered among the departments as may be found in some cases. All vouchers, whether a paying voucher, receiving voucher, or journal voucher, should be prepared in the department of accounts in order to preserve coordination of the organization of the clerical work and economy, and to be properly controlled and supervised under organized methods. Where the vouchering is of sufficient volume, use of the electric voucher machine will facilitate the clerical work of vouchering.

The function of costing and statistics in many cases is not given sufficient importance. A properly organized function of costing in connection with the use of mechanical methods has revolutionized the old way of preparing cost and statistical data, in economy, satisfaction and intelligent completeness of information. The system is devised especially for producing cost factors, arranged for report-making purposes, which, together with the statistical information, has brought the function of costing to a place of importance heretofore unknown.

Mailing and filing under this system become especially functions of importance. The block voucher for disbursements represents a very complete design for meeting the many requirements under the mechanical methods. It provides for two copies, one of which becomes a jacket for holding the supporting papers and documents; the other copy is detachable, the upper half for filing, the lower half for the account-keeping function. These vouchers are filed both alphabetically and numerically. The filing of such documents of the accounting department is an important link in making the system complete.

Centralizing the mailing function has been found to be of great advantage. In one case a city of less than 50,000 population adopted the plan and saved over $600 in postage the first year.

The function of reporting in the case of a government is of unusual value, especially under the mechanical methods. With the use of the mechanical budget control system, the books are closed daily and the accounts which are arranged for report-making purposes, are ready for the preparation of any report that may be desired. Daily reports may not be required, but the plan of organization of the entire clerical work under the system provides for daily reports to be made, for two reasons. The first is, that if the daily report is required as a part of the daily work, it furnishes evidence that the work is being kept current; and the second reason is, that the reports are placed on a binder or booked, which makes a reference record of considerable value, and the information is available if needed. Under the plan, if a special report is desired at any time, the accounts are ready for its preparation by merely copying ledger balances, and may be done without disturbing the regular routine.

The account-keeping function may be classed as the master function of the department of accounts. It will be understood that the mechanical budgetary control system of accounts is not a system of registers, such as may be found in use with the cash-book systems. It is a system of accounts.

Advantages of Mechanical Methods

In the old cash-book accounting systems, the number of accounts kept as representing the function, character and object of the transactions, is limited, on account of the impracticability of designing and keeping a system under such methods, which would involve a large number of accounts.

The mechanical methods provide for a large number of accounts that are necessarily required, without materially adding to the clerical work; therefore, the detail and control information covering all activities is produced in a completeness unknown under the old cash-book systems. The economy of the bookkeeping work is an outstanding feature, and may be illustrated by the work of one machine operator who may keep 2,500 accounts covering the expenses, revenues, budget, and financial ledger, close the books every day and prepare a daily statement. The use of the F.C.O Symbol Code eliminates the tendency of condensing the classification of transactions. There is no account called "Sundry Expenses" or "Miscellaneous Expenses," as everything is classified under this Symbol Code.

It may be interesting to refer to the experience of cities that have discarded the old cash-book systems and adopted the mechanical budgetary control methods, by giving a tabulation of some of the comparative results before and after adoption of the new system.

		Before Under the usual cash-book system of accounting with diffused functions	After Under the mechanical methods with centralized functions
1.	Number of ledger accounts maintained	450	6,500
2.	Number of bookkeepers	5	2
3.	Number of cashiers	11	2
4.	Number of clerks and bookkeepers for 35,000 monthly utility consumers	13	4
5.	Reports made	Monthly	Daily
6.	Books closed when	Annually	Daily
7.	Detail operating cost of motor transportation	No detail	Complete individual detail
8.	Are budget accounts maintained?	No	Yes
9.	Are the market orders posted daily?	No	Yes
10.	Is the budget surplus known?	Monthly	Daily
11.	Is bookkeeping work kept current?	No	Yes

Selling Water Service

Miniature Filter Plant at Industrial Exposition and Better Lawns Contest Are Effective

THE question of contact and friendly relations with customers is one to which water companies and municipal water departments are giving more consideration each year. The more the consumer knows about the plant and how he can save water, the more friendly his attitude toward the purveyor.

Fully appreciating the value of consumer interest, the Fort Madison Water Co., Fort Madison, Iowa, put on an attractive exhibit at an industrial exposition recently held as a part of the annual homecoming celebration sponsored by the American Legion, and many industries were represented in the exhibit tent. The water company's booth, pictured below, drew constant attention during the week of the celebration and received much favorable comment.

An Attention Getter

The attention of the passing crowds was first attracted by a stream of water running from a faucet suspended from a string and without any pipe connections for its source of supply. Stopping to investigate this seeming miracle, with which most water-works men are familiar, the visitors became interested in seeing how a filtration plant worked. It was possible to demonstrate this in a remarkably clear way, for a miniature filter, connected with two settling tanks of a size to suit was kept in constant operation. The filter was made of glass, as were both sides of each container. The first basin acted as a source of coagulated water, and the second as a sedimentation tank. A continuous flow of coagulated water was introduced into the filter in the following manner: Water to which coagulated turbidity had been added was pumped into the bottom of the first container. This water flowed into the second or sedimentation basin, which allowed a portion of the coagulated turbidity to be deposited in it before the water passed onto the filter. Then the process of filtration took place in the diminutive glass filter before the eyes of the visitors.

Twenty-five thousand people attended the exposition during the week, and of this number a goodly portion spent some time at the water company's booth. There was always some one on hand to explain the exhibit, and the constant stream of visitors watched with keen interest. Remarks made to the attendants showed that many consumers took away with them a better idea of what the water company does to safeguard their health, than they had before seeing the demonstration.

The Better Lawns Contest

Flowers and streamers gave the booth a festive appearance, and the employee in charge, having attracted guests within, lost no time in promoting the Better Lawns contest, sponsored by the water company. A placard asked the visitors if they had entered their lawns, and a book was conveniently placed for the recording of new names. Eighty-one contestants were secured.

In the Better Lawns competition, first, second, and third money prizes were offered to the owners of the best-kept lawns in town. The object was not only to increase the use of water for sprinkling purposes, but also to encourage home owners and other residents to make their gardens just as attractive as possible. It is not necessary to enumerate the benefits derived by individuals and businesses from an increase in home and civic pride and more beauty in the city.

Four plants of the American Water Works & Electric Co., at Little Rock, Fort Madison, Keokuk and Louisiana, Iowa, carried on these contests. In July, they announced its opening through the medium of advertisements in the newspapers and, subsequently, from time to time, they inserted other advertisements recalling the closing date and reminding residents to enter their lawns in the contests and to give them daily care. By personal contact, also, residents were encouraged to take part, timid ones being assured that the size of their lawns made no difference. It was constantly emphasized that the condition of shrubs and flowers, as well as the lawns themselves, would have a bearing on the judges' choices. Signs in the company's offices and at other appropriate places invited residents to enter their lawns.

A group of representative citizens of each city was asked to act as judges, the Women's Civic Club assuming this responsibility in Louisiana. A great deal of interest has been taken in this contest, a valuable by-product of which is the many occasions for personal contact between water-works employees and residents of the city. Civic organizations have looked with favor on the project as an encouragement to the beautifying of their city, and it is generally felt that the Better Lawns contests were of distinct value to the communities.

THE EXHIBIT OF THE FORT MADISON WATER COMPANY WHICH ATTRACTED SO MANY VISITORS

The 1929 Municipal Index published last month, includes within its 787 pages a 96-page section of water-supply statistics, giving data on sources, storage, treatment, mains, services and meters, consumption, meter rates, hydrants, etc., for water systems, whether municipally or privately owned, in cities of 1,000 population and over.

A GENERAL VIEW OF THE FERNDALE, MICH., MUNICIPAL YARD, SHOWING STORAGE FACILITIES FOR PIPE, TOOL BOXES, CONCRETE MIXERS AND EXCAVATORS

Salvaging Municipal Wastes in Ferndale, Mich.

By CARL H. PETERSON
CITY MANAGER, FERNDALE, MICH.

THE salvaging of municipal wastes is becoming more and more an important function of city governments all over the United States. This development came as a direct result of the World War. Fat, iron, copper, and other materials were high-priced and scarce at that time, so it paid to salvage anything containing these elements. This salvaging met with such great success that the movement has been carried forword continuously. There is scarcely anything pertaining to municipal wastes that cannot be salvaged for some profit, although perhaps small.

The first salvaging came as a result of garbage reduction whereby fats were extracted from the garbage, and the remaining residue, called tankage, used for fertilizer and chicken feed. The cost of reducing garbage is somewhat greater than that of selling it to piggeries, but during the war it paid when the price of grease was high.

After solving the garbage collection and salvaging problem, the next problem attacked was the disposal of tin cans, bottles, automobile bodies and like non-combustible refuse. This problem becomes more serious in a flat country, where there are no large valleys or ravines to be used as dumping-grounds, and it becomes almost prohibitive where the land is too expensive to be used for dumping.

Highland Park Initiates Action

Highland Park should be credited with being the sponsor of municipal salvaging in the Detroit metropolitan area. The city bought a piece of ground west of the city, a few miles from the center, and used it for a dumping-ground for a few years. Because of the flatness of the ground and the bulkiness of the tin cans and automobiles, it did not take long to fill this space. In addition, this made valuable ground almost useless for building purposes. From its experience, Highland Park determined that there must be some means of taking care of the city's waste other than dumping on vacant land.

The worst nuisance was taking care of tin cans, automobile bodies, bed-springs and other non-inflammable materials. The can manufacturers had been selling their waste from the manufacture of tin cans to smelters for re-smelting purposes, and someone conceived the idea of baling and selling the old cans that cities pick up. This was done and, based on Highland Park's experience, the city of Ferndale bought a can baler which presses cans together in bales varying in weight from 35 to 40 pounds. When a carload has accumulated, the bales are shipped direct to the smelters to be used for different purposes, one of which is making window-sash weights. Thus a waste material is removed from unsightly dumps and converted into a useful object.

THE SHED AND SHEARS CAPABLE OF CUTTING BARS UP TO 3 INCHES IN DIAMETER

MACHINE BALING TIN CANS IN BUNDLES OF ABOUT FORTY POUNDS PER BALE
Stacks of baled cans may be seen at the extreme right

Ferndale Attacks the Problem of Waste Metal and Glass

It was found in the collection of tin cans that a great many bottles were mixed in. The cans have to be sorted from the bottles before they are baled. It is hoped that this nuisance can be solved by ordinance in the near future. If the bottles and cans could be kept in separate containers and did not have to be sorted, a bigger profit could be made on the cans. In the collection of tin cans in Ferndale, a great deal of aluminum ware and glass is accumulated. These are sorted out and sold separately at the price of 10 cents per pound for aluminum. A market has just been found for all glassware in carload lots. Not much profit can be made on the glass, but it will be a means of disposing of the broken glass, which is more or less of a handicap at the present time.

Disposal of Automobile Bodies

Automobile bodies are very numerous in all parts of the country and are particularly noticeable in passing through any city on a railroad or main highway. Back of practically every commercial garage will be found at least one or two abandoned automobiles. Accumulations of these old cars are a disgrace to any city, and the cry has been raised, "What shall we do with them?" The garage owners say that if the city will find a place to put them, the owners will gladly haul them to that place. If there is no place to put them, however, how can the city dispose of them?

Such questions led to the only means of disposing of automobile bodies in Ferndale. The city bought a set of shears that are capable of cutting iron bars up to 3 inches square. The old automobiles are hauled into the yard, and the fenders and sheet metal work are cut up into 8-inch squares called busheling. This metal is shipped in carload lots to the smelters, to be used for re-smelting purposes. The engines are loaded separately and shipped. The rest of the car, such as the frame, axle and rods, are cut up into lengths not greater than 30 inches and shipped separately in carload lots. It may even be possible to take out the brass and high-speed babbitt and sell them separately.

From the continual changing of telephone lines and electric light lines, there is a great deal of copper wire wasted. In Ferndale all this copper wire is put in a pile, and the insulation burned off. Then the copper is baled and sold. There is always a ready market for this copper at 10 cents or more per pound.

Cost of Operating the Salvaging Department

When it is said that the Salvage Department pays for itself, consideration must be given to the cost of the extra hauling which has been eliminated by discarding the dumping-ground at some distance from the center of the city, and hauling the waste to a yard in the center of the city on a railroad frontage. This saving in the hauling distance, along with the money received from salvaging, makes a nice profit for the city. Then, in turn, if the investment which the city would have had to make in land for dumping-ground is considered, one can readily understand that a good deal of money is saved by the method being used in Ferndale. It takes away an unsightly dumping-ground which is a menace to the health of the locality, and the community is now a much cleaner place to live in. This is a matter of health—and a good, healthy city is the chief aim of any municipal organization.

The Disposal of Paper

Merchants have been in the habit of burning papers in the alleys and making a very unsightly nuisance. To eliminate this, the city has purchased a paper baler which will bale paper in 150-pound bales. This paper is being picked up from the merchants every day, baled and shipped direct to the paper mills in carload lots, and has been found to be very profitable.

Marketing

In marketing tin cans, paper and iron, the market should be watched very closely. Cans, iron, steel, copper, etc., do not deteriorate and there is a wide fluctuation in the market from one year's end to the other. A city should avail itself of plenty of room for storage and sell when the market is best. It is also necessary that the city yards be located on a railroad frontage convenient for loading into cars.

The Municipal Yard and Warehouse

In conjunction with the municipal yard at Ferndale, there is a warehouse which is run like a store. Everything that is purchased is charged to the warehouse, and as the material is used on the different jobs, the warehouse charges it to the job. In this way a great deal of money has been saved.

The city yard, which has an area of about 2½ acres, has an up-to-date garage where all equipment is taken care of by city employees. Each department pays for the work done upon its cars by the garage. Gas and oil are bought in carload lots and measured out from the municipal gas station as at any other gas station. All cars and equipment are washed, greased and inspected once every week. The oil is changed consistently every 500 miles. An indicator is fastened to each car, so that each driver is responsible for oil changes and inspection. It has been found that this careful inspection and care of the cars has saved a great deal of money.

In the Police Department, where one car is used by several officers, it naturally becomes nobody's duty to take care of the car. Cars used to wear out in from five to six months before this inspection and care. Now they run eighteen months and more before it is necessary to turn them in.

All concrete that is broken up from different work about the city is hauled to the municipal yard, where it is put through a stone crusher and used in repairing streets.

Denver Livens Up Its Fire Department

Equipment of New Fire-Houses and Other Changes Are in Anticipation of a Modern Fire-Alarm System for the City

By JOSEPH C. COYLE

THE adoption of a new zone and sector system and the rearrangement of the telephone districts within the Denver Fire Department, during the past few months, are doing much toward facilitating the movement of companies in response to alarms.

A larger assignment of companies on alarms within the high-value and congested areas is assured, as well as an additional engine and truck company to all schools, churches and other public institutions, on first alarms. A careful study of modern practices in other cities was made, and a system finally adopted which meets the present needs of Denver, as well as providing, so far as possible, for demands of the future. Boundaries of all companies' districts have been revised and complicated procedure eliminated.

The "Cover-in" System

In assigning companies to second alarms, the companies nearest to such alarms are assigned, while the "cover-in" assignments on second and greater alarms are arranged in accordance with the "step-up" or "run-round" system, so that there are not several companies from each district moving at the same time. Thus protection is afforded to certain sections of the city which have previously been left unprotected while companies were covering-in. This has been made possible by the use of "key houses" in the high-value and semi-industrial areas, which, under the new system, are usually occupied, either by the original company or by a cover-in company. No part of the city is left unprotected at any time now, even though a fourth alarm, or a series of alarms, occurs within the city.

Companies cover-in for other companies which are out of service, as designated on index cards in each engine-house on box alarms only. They will only cover-in on telephone alarms by order of the fire operator, who has full authority in such instances to assign the companies. This system eliminates several companies' "covering-in" where only one company is required.

The New Fire-Alarm System

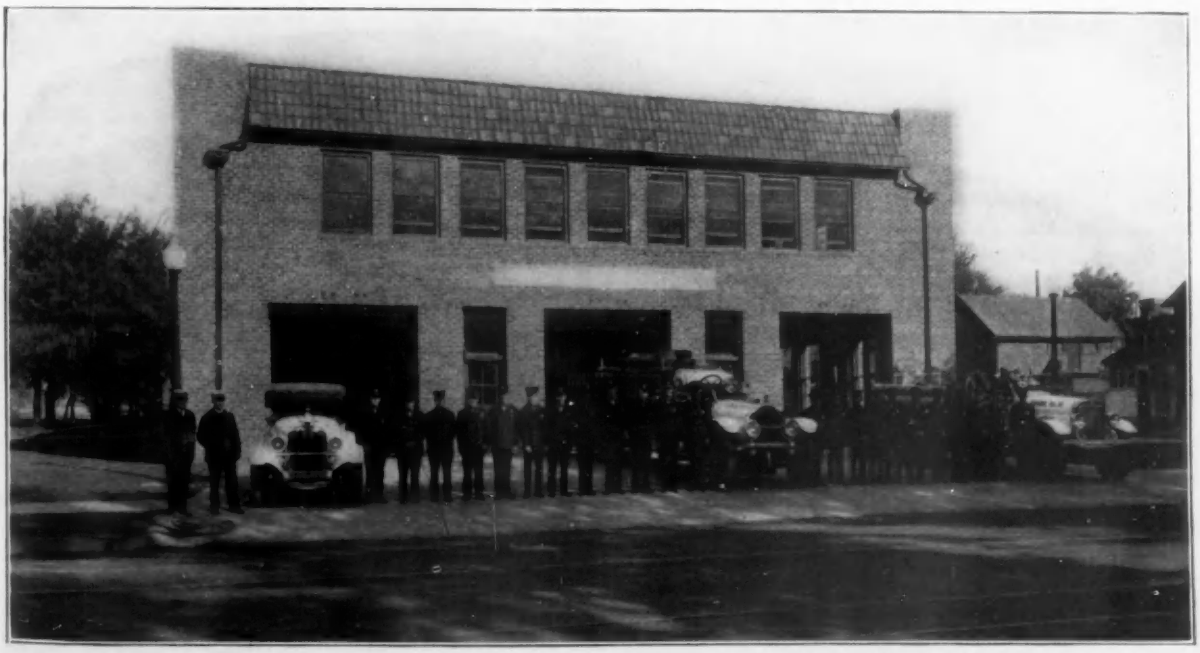
Numbers of public fire-alarm boxes throughout the city have been changed, as fast as replacements could be made, so as to include four numerals, instead of one, two and three as formerly used. The zone and sector system, as adopted, provides for the division of the city into five zones, and each zone into five sectors. For instance, zone 1 embraces sectors 11 to 15, inclusive; zone 2 embraces sectors 21 to 25, inclusive; zone 3 embraces sectors 31 to 35, inclusive; zone 4 embraces sectors 41 to 45, inclusive; and zone 5 embraces sectors 51 to 55, inclusive. By this means each zone and its sectors are easily identified. The lower-numbered sectors correspond to the more congested areas in the various zones. The four-digit box numbers are so arranged that the first two numerals represent the sector and the last two represent the number of the box in that sector, from which an alarm comes in.

Private boxes are so numbered that the first numeral signifies the zone and the second numeral signifies whether it is a manually or auxiliary operated box. The numeral 6 represents the manually operated box, and the numeral 7 indicates the auxiliary. The last two numerals indicate the number of any box in its particular zone. There are 214 public and 104 private boxes in the city, and a card is made out for each of these, showing the old box as well as the new one.

In addition, 1,636 index cards have been prepared for as many new fire-alarm boxes which are to be installed in the future, one for every 300 feet in the business districts, for every 500 feet in closely built residential sections, and for every 1,000 feet in the suburbs.

How the Assignment Cards Are Used

There 1,953 assignment cards are filed in a cabinet, and by referring to them the proper company to respond to a



THE LATEST STATION, NO. 10, OF THE DENVER FIRE DEPARTMENT, WITH MEN AND EQIUPMENT

fire-alarm in any part of the city may be seen at a glance. On these cards, which are 5 inches by 8 inches, paragraphs pertaining to the first, second, third and fourth alarms show the assignment of original and cover-in companies, in proper order relative to the distance to be traveled. The step-up system, in arranging cover-in assignments as previously explained, provides constant protection for all parts of the city. In case of a long-working fire, the operator has authority to move cover-in companies as on assignment cards covering any specific fire.

White cards are used to represent the boxes now in use, and salmon-colored cards for proposed boxes. The latter cards are to be replaced by white ones as fast as new boxes are installed. A complete set of these cards for the Cardex filing system was placed in the operator's room, and another in the chief's office. The system in the operating room consists of a cabinet and 30 trays, each tray containing 80 pockets, representing each and every zone and sector in the city. Twenty-five of these trays are assigned to public boxes and the remaining five to private boxes in the particular zone shown on each tray.

Each of the 21 engine-houses is equipped with a similar set of white index cards for public and private boxes now in service; a book of the old box numbers for reference during the time of making the change; a street directory book; and a complete set of district maps which show the exact territory to be covered by each company, on certain alarms. All district chiefs' headquarters have district chiefs' maps, in colors; a certain color is assigned to each assistant chief's district, governing his response to alarms in the city. These headquarters also have company maps of zone and sectors.

Each company and chief's headquarters received a zone map, governing the location of each zone and sector, together with public and private boxes therein. These changes have been made in anticipation of a future change to a manually operated fire-alarm system, and all new fire-stations in the city are being built and equipped so as to facilitate the installation of this new system when the time comes. The latest station, No. 10, at 32nd and Curtis Streets, is an example of the new type of station. It is a commodious two-story structure of fire-resisting brick construction and was planned for future expansion, as well as for the present needs of the service.

FIRE GONG AND INDICATOR BOARD, STATION NO. 10

Indicator Board in the New Station

The gong at this station is mounted on a large hollow base, or sound-board, which tends to amplify the sound. Just below the latter, an indicator board, devised by one of the company, is attached to the surface of the sound-board and shows at all times just what equipment is out to a fire, and just what chiefs have gone. This indicator board, which is 14 by 20 inches, has four perpendicular rows of buttons, twelve buttons to each row. Two rows at the left indicate the engine companies now in service, and provide for the addition of three new companies at some later date. The third row indicates the trucks, with provision also for future additions. The fourth row of buttons are for the staff and district chiefs, with their district lettered above each button, such as "central," "south," etc. Above each button, between it and the name of the chief's district or the number of the engine or truck, is a small, round, glass-covered hole. To each button is attached, on the back of the board, a half-disc of glass, sections of which are colored black, red and green.

When all equipment is in service but none is out to fires, at every station in the city, the board is dark. When an alarm comes in, a switch just below the board is turned, lighting up the board. The buttons are then manipulated to show just what chiefs and equipment respond to that fire. The buttons for those going are turned to red. Thus the men, perhaps just aroused from a sound sleep, may see at a glance the general location of the fire, by the equipment which has responded, as well as what companies are out. If any engine or truck is temporarily out of service, that fact is indicated by turning its button to green.

Switches just below this indicator board control the house lights, a red light in the center of the street in front of the station, the operation of the gong and of the front doors. The red light in the street is switched on when equipment is going out of the station. The doors are electrically operated, with a ¼-horsepower motor at each door, controlled both from the board and from a switch in the center of the room. A secondary switch opens and closes the door for the assistant chief's car, which stands at one side. The doors close automatically two minutes after the trucks are out, or may be closed at will from the switches.

Another interesting device at this station is located just above the telephone. It is so connected to the latter that the ringing of the 'phone bell at night closes a drop-switch, makes a connection and switches on a light in the booth, another at the indicator board, and a third at the electrically operated clock nearby. By the use of this device, the man on watch may turn out all lights at night, yet when a call comes in he need not grope around in the dark for a switch. There is, however, a switch on the in-

Box No. 64 1456 — Location Santa Fe and W. 8th Avenue

Alarms	Engine Companies	Pumper Only	Ladder Companies	Squad Co.'s	Miscellaneous	Chiefs
FIRST	2 11 1	1	11	2		S
SECOND	19 6 13	6	1 6		Fuel Wagon	C
2-11						
THIRD	20 21 3		12			H
3-11						
FOURTH	15 17					
4-11						
COVER IN ASSIGNMENT						
2-11	16 3 17		12			N H
	11 2 6		6			FAO 1
3-11	15 14		15			E
	1 13		1			4
4-11	18					
	1					

SAMPLE OF INDEX CARDS FOR FIRE-ALARM BOXES

strument by which the lights may be turned on or off by hand.

Many Conveniences Provided

At each point on the equipment floor where the trucks stand is a sump drain, and the floors slope slightly toward these points, to facilitate the washing of equipment and the floors. At one corner of the room is a closet, reaching the entire height of the building, with a sump drain in the center of the floor, in which all hose not in use is hung to dry. At one corner of the floor, at the rear, is a well-equipped kitchen, with modern plumbing, gas range and other conveniences for preparing meals.

The floor of the firemen's quarters, on the second story, is of oak and is kept neatly oiled and polished at all times. There are neat single beds, individual lockers for clothing, a well-appointed lavatory finished in white tile, with large mirrors for use in shaving, etc., and other conveniences. There are individual offices for the captains and assistant chiefs, with private bath for the latter. A recreation room is provided for the men, with a radio, card tables, circulating library and other equipment.

By making these changes in the operation of the fire-alarm system and in equipment, the department is providing for the time when Denver will have more than double its present population.

Street Showers—Carnival Style—as Evolved Through Careful Experiment

By ROBERT F. G. KELLEY

SUPERINTENDENT, BALTIMORE PUBLIC BATHS, BALTIMORE, MD.

SINCE the year 1922, the Free Public Bath Commission of Baltimore has been experimenting in the use of street shower-baths. This being a new field of work, it has been recognized that considerable study would have to be made as to its utility and desirability.

At first, several rather elaborate structures were planned, consisting of platforms in several sections, on which five and six shower-heads were placed. It needed only a short tryout to show that for general utility, economy of management, etc., these would not do, and for the next six years considerable experimenting was done in the effort to construct a simple device that would meet our needs.

During this period there were many moments when we questioned whether it would be wise to continue their use. Some of our troubles were lack of publicity, fickleness of the children, objections of parents, and frequent changes of temperatures. Some of the lack of publicity was probably caused by the fact that our showers lacked life or color, not appealing to the eye. When a more colorful type of shower was developed, we found that the newspapers would give more publicity to them, as they photographed well.

This also meant that they were willing to publish a list of locations where the showers were to be placed. Automatically this solved two more of our problems—the fickleness of the children and the objections of the parents. As the papers featured the showers, the children made more preparations for them, especially along the line of proper clothing, and a lively type of shower appealed to their imagination. In the beginning of our work, children had come to the showers in any old type of garment and remained as long as the showers were going, which, from a health standpoint, was not good, and which also aroused the antagonism of the parents. Under the new development, as the children came in bathing suits or trunks, the objections of the parents ceased.

ONE OF MANY STREET SHOWERS USED IN BALTIMORE, MD.

And now for our experiences in the year 1928: On July 9, the temperature ranging from 75 to 92 degrees, with much humidity, two showers, of the type in use for several years, were placed in four locations and the response on the part of the children was large. Photographers from all the afternoon papers were on hand, and the scenes were lively. Our office was besieged with requests to place showers in various parts of the city.

The next day the heat subsided, but the experience of the first day showed us that we were not operating the showers in the most practical way, and for the next few days experiments were made by our own employees in simpler devices. Three types were made, all so simple that one man could handle any of them, including their transportation from place to place. Thirty sites were selected and a man assigned to each five sites. One hour was spent at each place, beginning at 11 a. m., closing down between 12 and 1 for lunch. The Police Department sent an officer to each site to see that order was preserved and traffic regulated. The newspapers published a list of the sites and the hours in which the showers would be operated, which helped greatly. The first day of the new showers, July 16, was warm and the crowds were large, showing that we were on the right track.

Our first day's impression was that special care would have to be taken to prevent accidents from passing machines. We could also see that, while there was an improvement, we still could make a lighter and more practical type. Further experiments were made and by the last of the month, a simple type, weighing only ten pounds, was selected. In brief, this consisted of several pieces of 1½-inch galvanized pipe, regulated to 45 degrees, attached by a brass connection to the fire-plug and on the end a 3½-inch galvanized coupling for larger spray. The year was by far the most successful we have had with the showers, and we were convinced that with the proper equipment they could become an important part of the bathing system of a large city. One important development was that because of the publicity given them, in many neighborhoods home-made contrivances were put into use and much relief given during the warm spells.

During the season the showers were operated 291 times, in 60 different locations. In connection with their use we make the following suggestions:

1. The need of publicity is great and the effort should be made to get the daily papers interested, which is not hard during an extremely warm spell.

2. There should be proper policing, as there is much danger from passing autos.

3. Frequent change of sites is necessary, as children soon tire of the novelty.

4. The type of shower should be such that the children will get a "thrill" from using them—plenty of motion is what they want.

5. A lively type is a good thing for a neighborhood, as it creates a carnival spirit and much pleasure is given the grown-ups in watching the children.

6. Care should be taken that the water be warm enough for their use. In our latitude this occurs around the first of July, if the weather has been normal prior to this.

Judging from our experience, we would suggest that the very best place for their use would be the public playground, which would be a much safer place for their operation than the streets.

Plural Voting or Appointive Councilmen Suggested As Alternative to Proportional Representation

To the Editor of THE AMERICAN CITY:

It is frequently asserted by magazine writers that our municipal democracy is a failure. If this is true, then the fault must lie in our election system, which forms the basis of our democracy.

The election of representatives by districts means as a rule that the smaller the district, the smaller will be the man chosen. In municipalities where the ward system still prevails, we now have minority representation according to different divisions of the city. What we need is representation according to different divisions of public opinion in the community as a whole.

In an effort to remedy existing defects, the Citizens Union of New York City, the City Charter Committee of Philadelphia, and civic bodies elsewhere, are urging the adoption of proportional representation.

But since district representation has become so firmly rooted in our political system, a compromise plan could easily be made workable by providing that a small number of councilmen be elected from large districts, at the same time permitting the election of candidates at large. Nominations should be made, not by primary, but by petition of a small number of citizens. Each voter should be allowed one vote for a district candidate and three votes for candidates at large. He might be given the option of casting two or three of these votes for one candidate if he so desires. All candidates at large would be declared elected who receive a certain percentage of the total votes (say 10 or 20) regardless of the number who may receive such percentage of the vote. A fixed number of members on the city council is not necessary.

Under this plan the total membership of the governing body would be determined at each election in accordance with the number of groups into which the electorate divided itself.

No candidate at large would base his campaign on the defeat of any other candidate. Each candidate would go before the voters because of an affirmative attitude towards some proposed policy or measure, and not because of opposition to any other condidate. This would raise the whole tone of our municipal elections, since the contest would be urged mainly over principles rather than personalities.

This method would eliminate the complexities incident to the transferring of various choices under the proportional representation plan in use in Cleveland and Cincinnati, to which objection is raised by some.

It may be contended that the majority faction in the Council might be outvoted by a combination of minority representatives. This is precisely the situation in the United States Senate, but no one seems to be greatly disturbed about it.

However, to meet this objection it might be provided that any candidate at large receiving 50 per cent or more of the total vote be given two votes in the City Council, and three votes for receiving 75 per cent or more of the total vote. There is precedent for plural voting in the increased voting power conferred upon some of the members of the New York Board of Estimate and Apportionment. Or, it might be provided that any councilmen at large receiving more than 50 per cent of the total vote be authorized to select one additional representative for each 25 per cent by which their combined vote exceeds that of the minority element. This would mean the creation of a deliberative body, part of whose members would be chosen from geographical divisions of the electorate, part from different divisions of public opinion, and part by appointment of the select by the majority elect.

This plan would make possible the election or selection of a number of strong, independent and scholarly men who would be in a position to wield a wholesome and guiding influence in the determination of public policies. Everyone knows that men of force and vision are not as a rule mixers or vote-getters, and hence not able to marshal majorities by the old political tactics. Under proportional representation, however, they would succeed in securing support of a sufficient following of like-minded citizens to insure election.

The proposal to make part of the legislative body appointive is not an untried experiment. It was in vogue for a whole century in the appointment of United States Senators by the majority element in each of our state legislatures. Many students of government now contend that a much higher average caliber of senators was chosen under the old method than under the present system.

Members of appointive boards in most cities are usually high-class citizens, and in the selection of such men there is no surrender of popular rule, because the people elect and hence control those who make appointments.

Under the old system we have had government partly by elective councilmen and partly by appointive members of various boards. The proposed new plan would give us one central body composed of a combination of minority, majority and appointive representatives, which would give a real cross-section of public thought and interests in the community as a whole, and a governing body which would be ideally constituted in framing legislation and in selecting a manager to take charge of the administrative and business affairs of the municipality. Each group would have voting power in the governing body substantially in proportion to its strength at the ballot box. This would mean representative democracy in its fundamental and most effective form.

All officials should be chosen for a long term, if re-elected after having served one term.

Jamestown, N. Y., April 10, 1929.

SAMUEL A. CARLSON,
Former President, New York State Conference of Mayors.

Our 48 State Capitol Buildings

By W. R. GREELEY

Of Kilham, Hopkins & Greeley, Architects, Boston, Mass.

THE writer, after months of "collecting," has brought together photographs of the seats of government of the forty-eight American Republics—the capitol buildings of the states. This collection is apparently unique, and provides a graphic review of the history of monumental architecture in this country. It picks up many a loose strand and weaves them all into a pattern showing our supreme efforts, as democracies, to build great buildings.

Some states have gone through the experience once, some twice. Some have altered and restored and added. Some states regard their seats of sovereignty with pride, and others not, or, if they do, it is pride in something else than monumental art.

Some have taken an interest in the building alone, as a completed object in masonry, set down where you will. Others have realized the value of the setting, notably California, whose capitol grounds reveal the value of the landscape art in conection with the architectural monument.

Products of Different Periods

The construction dates of the various capitols are given in the latter portion of this article and indicate the march of progress in that field. The early examples show taste and refinement, elegance and crispness of detail. Bulfinch's Maine and Massachusetts and Connecticut buildings are examples. The older Massachusetts State House is of course all the "rage" and is being translated into new materials in many places today.

The beautiful Greek revival at Nashville stands out in pleasant relief among tawdry and garish piles in neighboring states. At Hartford, a kind of Gothic is used, but with an unexpectedly happy effect. The glistening tower has real beauty of mass and of light and shade. Columbia has a dignified and stately little building in the classic tradition.

The ineptitudes of the Victorian era, and the platitudes of the gay nineties are numerous and depressing. The twentieth century provides a more interesting gallery.

McKim's Rhode Island dome, crowning a building of very pleasing mass, and elegant in detail, is the pride of Providence, and overlooks the city from a commanding eminence, an unusually monumental site, rising gradually at a fixed angle like the *tapis vert* at Versailles—not a hill but an ascending approach.

Post's dome at Madison is another meritorious design, and here, too, the building gains from a dominating position at the high point of the isthmus which constitutes the city.

Goodhue's Nebraska tower marks a definite sloughing-off of the confining classic formula, and a positive advance into new fields. It points to brilliant achievements not too far in the future.

States' Growth Requires Additions

The field of exploration is a fruitful one, for the states are fast outgrowing their headquarters, and many millions must be expended annually to bring them to efficiency, and to meet adequately the increasing demand for something magnificent in appearance. In Massachusetts, for instance, nearly ten million has been spent on additions to the State House in the past thirty years, thereby increasing its size to six or seven fold the original. Today, still more space is needed. The problem demands in many states a group of specialized buildings for state administration.

The central unit might contain the legislative chambers and their offices, and committee rooms. The second unit might provide for the judicial needs, and the third and largest for the executive. This last would comprise quarters for governor, council, and executive departments. These departments are in some instances so large that they could be housed advantageously in a group of buildings.

The segregation into subdivisions would have the advantage that the central unit could be monumental architecturally, and the others could be thoroughly adapted to practical needs, on the lines of the modern office building, with open floor areas divisible at will into varying allotments to suit changing departmental needs.

After all, a state capitol is not a mausoleum, but a living organism, and the best architectural expression of it will be in terms of a monumental and commanding central feature, flanked with wings or secondary buildings that are teeming with activity, and so designed that they can be easily increased or added to. The time for burying appropriations in stiff and stereotyped palaces of state must give way to a new era of state building that will first provide effectively for governmental departments, without abandoning principles of beauty and dignity, but accommodating them to plans that are workable and feasible.

Dates and Architects of Capitols

The following brief data regarding the construction dates and architects on the present capitol buildings have been supplied by state, historical or university libraries in each state.

Alabama.—The central portion of the present capitol building was erected in 1850. An appropriation made in 1885 resulted in the construction of a rear extension. A south wing was authorized in 1903 and a north wing in 1911.

Arizona.—The original building was completed in 1900. The architect was J. Reilly Gordon.

Arkansas.—This capitol building was completed in 1912. George R. Mann and Cass Gilbert were the architects.

California.—The present and sixth capitol building of California was occupied in 1869 but not completed until 1874. The plans were drawn by F. M. Butler, and the first superintending architect was Reuben Clark. The latter was succeeded by G. P. Cummings, who was followed by A. A. Bennett, under whose supervision the building was completed.

Colorado.—The capitol structure of this state was completed and first occupied in 1895. The firm of E. E. Myers and Son, of Detroit, were the architects and F. E. Edbrook, of Denver, was the supervising architect.

Connecticut.—Richard M. Upjohn, of New York City, was the architect for the present capitol building, which was occupied permanently in 1879.

Delaware.—Built in 1722 as the court-house for Kent County, Delaware's state house is the second oldest capitol building still in use. It became the state house in 1777, was remodeled in 1788-91, and again remodeled in 1870. In 1909, the exterior of the building was restored, and at the same time a library wing was added. An annex in the rear was built in 1926, and Brown and Whiteside of Wilmington were the architects for this work.

Florida.—The original capitol building was completed about 1843 and underwent alterations and additions in 1902.

Georgia.—Edbrooke and Burnham, of Chicago, were the architects for the capitol, which was completed in 1889.

Idaho.—Started in 1906, the main building of the state capitol was completed in 1912. The east and west wings were erected in 1919-20. The architects were Tourtellette and Hummell, of Boise, Idaho.

Illinois.—Although first occupied in 1876, the capitol building was not entirely completed until 1888. John C. Cochrane, of Chicago, was the original architect and superintendent of the work, and W. D. Clark, of Davenport, Iowa, was the assistant superintendent. Alfred H. Piquenard, of the firm of Cochrane and Piquenard, undertook personal supervision of the work in 1876, but, following his death that same year, M. E. Bell became the resident supervising architect.

Indiana.—The present and fourth capitol building was finished in 1888. Edwin May, of Indianapolis, was the architect for nearly two years, and then Adolph Scherrer, of Indianapolis, assumed that position.

Iowa.—Formally dedicated in 1884, the present capitol building of Iowa was not completed until 1886. The firm of Cochrane and Piquenard were the general architects and superintendents of the work.

Kansas.—This state's capitol building was completed in 1903. McDonald Brothers, of Louisville, Ky., designed the structure, and Haskell and Wood, of Topeka, Kans., were employed to make working plans and to superintend the construction. John G. Haskell was the original architect in charge of actual construction.

(*Continued on page* 98)

ALABAMA STATE CAPITOL, AT MONTGOMERY

CONNECTICUT STATE CAPITOL, AT HARTFORD

ARIZONA STATE CAPITOL, AT PHOENIX

DELAWARE STATE CAPITOL, AT DOVER

ARKANSAS STATE CAPITOL, AT LITTLE ROCK

FLORIDA STATE CAPITOL, AT TALLAHASSEE

COLORADO STATE CAPITOL, AT DENVER

GEORGIA STATE CAPITOL, AT ATLANTA

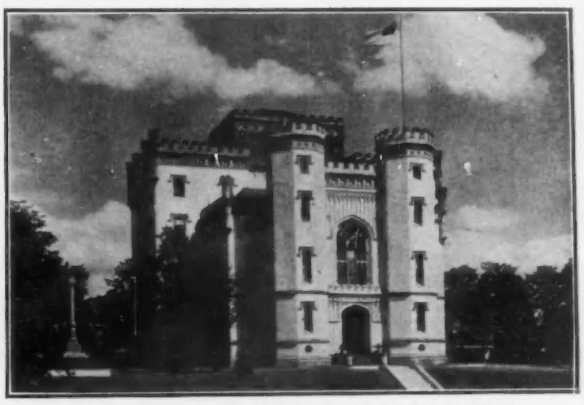
IDAHO STATE CAPITOL, AT BOISE

KANSAS STATE CAPITOL, AT TOPEKA

ILLINOIS STATE CAPITOL, AT SPRINGFIELD

KENTUCKY STATE CAPITOL, AT FRANKFORT

INDIANA STATE CAPITOL, AT INDIANAPOLIS

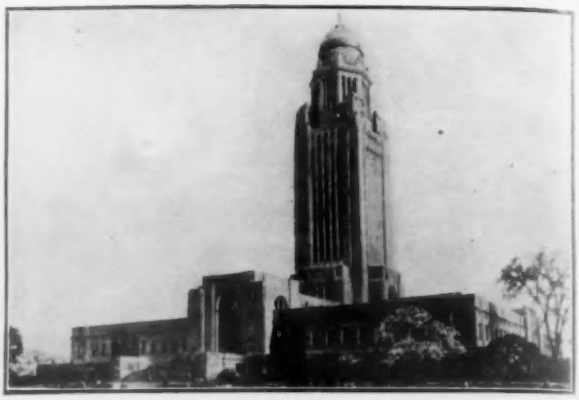


LOUISIANA STATE CAPITOL, AT BATON ROUGE

IOWA STATE CAPITOL, AT DES MOINES

MAINE STATE CAPITOL, AT AUGUSTA

MICHIGAN STATE CAPITOL, AT LANSING



NEBRASKA STATE CAPITOL, AT LINCOLN

MINNESOTA STATE CAPITOL, AT ST. PAUL

NEVADA STATE CAPITOL, AT CARSON CITY

MISSISSIPPI STATE CAPITOL, AT JACKSON

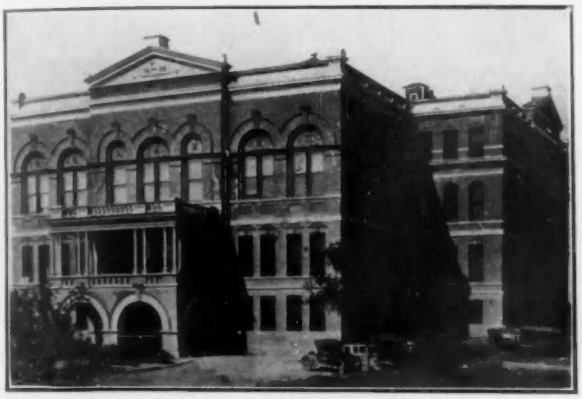
NEW MEXICO STATE CAPITOL, AT SANTA FE

MISSOURI STATE CAPITOL, AT JEFFERSON CITY

NEW YORK STATE CAPITOL, AT ALBANY

NORTH CAROLINA STATE CAPITOL, AT RALEIGH

PENNSYLVANIA STATE CAPITOL, AT HARRISBURG



NORTH DAKOTA STATE CAPITOL, AT BISMARCK

RHODE ISLAND STATE CAPITOL, AT PROVIDENCE

OHIO STATE CAPITOL, AT COLUMBUS

SOUTH CAROLINA STATE CAPITOL, AT COLUMBIA

OREGON STATE CAPITOL, AT SALEM

SOUTH DAKOTA STATE CAPITOL, AT PIERRE

TENNESSEE STATE CAPITOL, AT NASHVILLE

VIRGINIA STATE CAPITOL, AT RICHMOND

TEXAS STATE CAPITOL, AT AUSTIN

WASHINGTON STATE CAPITOL, AT OLYMPIA

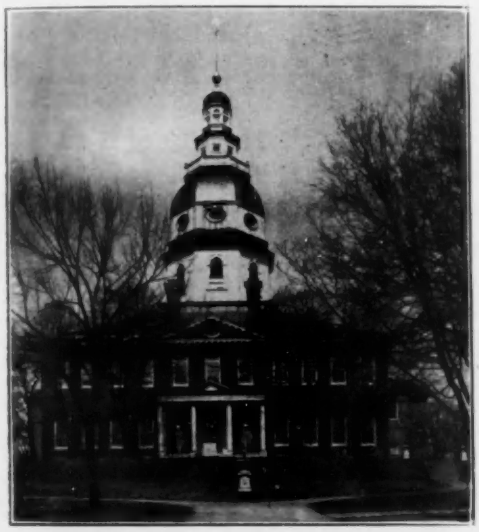
UTAH STATE CAPITOL, AT SALT LAKE CITY

WEST VIRGINIA STATE CAPITOL, AT CHARLESTON

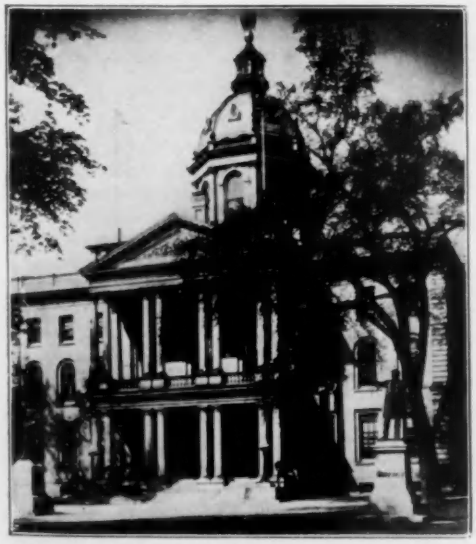
VERMONT STATE CAPITOL, AT MONTPELIER

WISCONSIN STATE CAPITOL, AT MADISON

CALIFORNIA STATE CAPITOL, AT SACRAMENTO



MARYLAND STATE CAPITOL, AT ANNAPOLIS

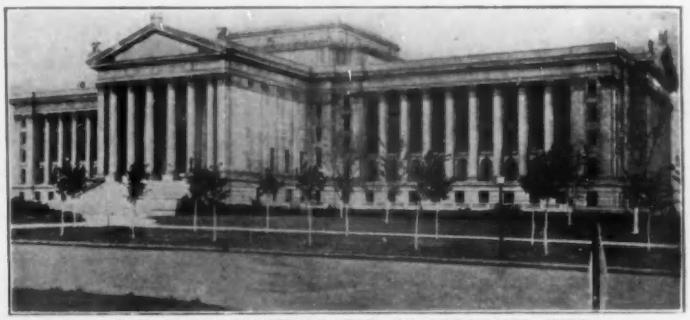


NEW HAMPSHIRE STATE CAPITOL, AT CONCORD

MASSACHUSETTS STATE CAPITOL, AT BOSTON

MONTANA STATE CAPITOL, AT HELENA

NEW JERSEY STATE CAPITOL, AT TRENTON



OKLAHOMA STATE CAPITOL, AT OKLAHOMA CITY

WYOMING STATE CAPITOL, AT CHEYENNE

KENTUCKY.—The capitol building of Kentucky was constructed under the direction of Frank M. Andrews, of New York City, and completed in 1910.

LOUISIANA.—The state house, on a high bluff overlooking the Mississippi River, was originally built in 1847, the architect being J. H. Dakin. Fire destroyed this structure in 1862. The present capitol was erected in 1880-2. The architect for the rebuilding work was W. A. Freret.

MAINE.—Charles Bulfinch was the original architect of the Main Capitol, and the building was ready for occupancy in 1832. It was remodeled in 1852, 1860-61, and in 1890-91. G. Henri Desmond of Boston, was the architect for the rebuilding work, which was done in 1909-1910. The original front was retained.

MARYLAND.—The present capitol building, Maryland's third to date, was completed in 1874. Fire destroyed the first building in 1794, and the second, which was finished in 1706, was used for 66 years.

MASSACHUSETTS.—The cornerstone of the Massachusetts State House was laid in July, 1795, and the building occupied for the first time in 1798. Charles Bulfinch was the original architect, but many others have supervised the numerous alterations and additions that have been made. The building was enlarged in 1889, the cornerstone for an east wing was laid in 1914, and the construction of a west wing authorized in 1915.

MICHIGAN.—Elijah E. Myers, of Springfield, Ill., submitted the design adopted for the capitol building of this state and was the architect and superintendent of construction. The building was completed in 1878 and occupied in 1879.

MINNESOTA.—This state capitol building was finished in 1902. It was designed by Cass Gilbert, who at that time was a young architect living in St. Paul.

MISSISSIPPI.—Theodore C. Link was the architect for the capitol building, which was dedicated and completed in 1903.

MISSOURI.—With the exception of some furnishings and decorations, the capitol was completed in 1917. Tracy and Swartwout, of New York City, were the architects.

MONTANA.—The original capitol was completed in 1902 and dedicated in July of that year. The architects were Bell and Kent, of Helena. The east and west wings were completed in 1912, the associated architects being E. M. Andrews and Co., of New York, and Link and Haire, of Helena.

NEBRASKA.—The new capitol building of Nebraska is now under construction. The architect was Bertram Goodhue, deceased.

NEVADA.—Joseph Goseling, of San Francisco, was the architect of Nevada's capitol, which was completed in 1871.

NEW HAMPSHIRE.—This capitol was built in 1819 and Stuart G. Park was the architect. It was remodeled in 1866 under the supervision of Gredley J. F. Bryant, as architect, and remodeled again and enlarged in 1919 under the supervision of Peabody and Stearns, architects.

NEW JERSEY.—The capitol has been built at sundry times and added to at various periods. Commissioners were appointed in 1790 to select a site in Trenton for the building. The front portion of the original structure was destroyed by fire in 1885 and a new building was completed in 1889. L. H. Broome, of Jersey City, designed and supervised the construction of the front and dome of this latter building, and it is now the nucleus of the present capitol. A four-story structure was added in 1907, an appropriation made in 1911 for the extension of the west wing, and another appropriation made in 1912 for the extension of the east wing. An annex is now being built.

NEW MEXICO.—This capitol was completed and accepted in 1900. It has been added to twice since that date. The architects were I. H. and W. M. Rapp.

NEW YORK.—Formal occupation of the capitol building took place in February, 1879. Thomas Fuller was the original architect and was followed by Frederick Law Olmsted, Leopold Eidlitz, Henry H. Richardson and Isaac G. Perry. Fire in 1911 practically destroyed that part of the building west of the central court above the third floor, and Lewis F. Pilcher supervised the rebuilding.

NORTH CAROLINA.—The present capitol building was finished in 1840. I. Theil Town, of New York, acting for the commissioners in charge of the building program, obtained David Paton to superintend the work.

NORTH DAKOTA.—The capitol building of North Dakota was constructed in three sections. The central portion was completed in 1884, and L. S. Buffington, of Minneapolis, was the architect. George Hancock, of Fargo, was the architect for the front or south section, which was completed in 1894. The back or north portion was completed in 1904, and the architects were Butler Brothers and Ryan, of St. Paul.

OHIO.—The present and second capitol building of Ohio was begun in 1838, dedicated in 1857, and completed in 1861. The original plan adopted was a modification of designs submitted by Henry Walter, of Cincinnati, Martin E. Thompson, of New York City, and Thomas Cole, of Catskill, N. Y. Numerous other architects supervised the work during succeeding periods.

OKLAHOMA.—Messrs Layton and Smith were the architects for the capitol at Oklahoma City and the various officers moved into the building during 1917.

OREGON.—The capitol building was accepted by the state in 1876, although not quite completed. Succeeding legislatures have made appropriations for alterations and completion. Justus F. Krumbein, of Portland, was the original architect.

PENNSYLVANIA.—Work was started on the capitol in 1898, and the building was dedicated in 1906. Joseph M. Huston was the architect. A more elaborate front has been constructed since the picture reproduced with this article was taken.

RHODE ISLAND.—The state house was occupied in 1901 and the completed building turned over to the state officially in 1904. McKim, Mead and White, of New York City, were the architects.

SOUTH CAROLINA.—The state house was begun in 1851, but not until 1904 was it actually completed, and even after that date improvement work continued. Major John R. Niernsee was the original architect, but died before the building was completed. His successors were J. Crawford Nielson, J. Frank Niernsee, Frank P. Milburn, and Charles C. Wilson.

SOUTH DAKOTA.—The capitol of this state was completed and occupied in 1910, and the architect was C. E. Bell, of Minneapolis, Minn.

TENNESSEE.—William Strickland was the architect for the present capitol building, and it was completed in 1855.

TEXAS.—The Texas capitol was completed the latter part of 1887. Colonel E. E. Myers, of Detroit, Mich., was the architect.

UTAH.—Richard A. Kleting, of Salt Lake City, was the architect of the capitol, which was completed during July, 1915,

VERMONT.—The main state house was completed in 1838, and Ammi B. Young was the architect. In 1857-58, this building was enlarged, with J. R. Richards, of Boston, as architect.

VIRGINIA.—Completed in 1792, the original state capitol was designed by Thomas Jefferson. Two wings were added in 1902.

WASHINGTON.—The new capitol building was completed in 1928, and the architects were Wilder and White, of New York City. The building is one of three units comprising the capitol group.

WEST VIRGINIA.—This state now has its new capitol building under construction, and the two wings have been completed. Cass Gilbert, of New York City, is the architect.

WISCONSIN.—The capitol building of Wisconsin was started in 1907 and completed in 1917. The firm of George B. Post and Sons, of New York City, were the architects and Lew Porter, of Madison, was the supervising architect.

WYOMING.—Work on the capitol began in 1888 and the first section was completed in 1890. The firm of D. W. Gibbs of Toledo, Ohio, were the architects. The building as it now stands was finished in 1917, William Duboise of Cheyenne, Wyo., being the architect.

Relation of Airports and Airways to Municipal and Regional Planning

SEVERAL of the fundamental factors to be considered in laying out a municipal airport were presented by Ralph Earle, President of Worcester Polytechnic Institute, in a paper entitled "The Relation of Airports and Airways to Municipal and Regional Planning," which he read recently before the Institute of Municipal Affairs at Norwich University in Vermont.

One of the first requirements of proper airport planning is the selection of an airport site which lies adjacent to at least one and preferably two highways and not more than 10 miles from the business center of the city, President Earle stated. Of prime importance also is the choice of a field that is practically level and free from any obstructions that might limit the actual operations area.

The paper also emphasizes the necessity of choosing a flying field that has a firm surface, to permit safe and comfortable take-offs and landings. In this connection, Mr. Earle expressed himself as favoring well-sodded landing strips, but left the respective advantages of graveled or paved runways open to analysis by engineers in each individual case. He advocated a crown of from 4 to 6 inches per 100 feet of width in order to facilitate drainage, and the absence of any shoulders along the edges of runways, with the same aim in view.

Other Important Considerations

"The longest landing strip, of course, is to be aligned in the direction of the prevailing wind, for the lifting power of the planes depends directly upon the air speed, and it is best to get all the help possible from the wind and not figure as available any component of a side wind as a desirable factor. A site admirable in all respects may have to be discarded because of prevailing winds and weather. Low-lying areas are often wrapped in fog or ground mist during many days of the year, while other areas in the vicinity are free. Then again, smoke from industrial plants may blow over a chosen site. A level tract might have a hill at the side or a tall, isolated structure nearby, such as a chimney or a gas plant, which, even though well within the 7 to 1 climb, are a menace to planes. Ports at high altitudes, of course, must be larger than those at low altitudes."

Airport buildings should not interfere in any way with the landing area, but should be erected along one side of the airport, the speaker said. A complete airport should embrace many types of buildings, he believes. Included in his list are a recreation structure, a restaurant or tea room, and, of course, such structures as hangars, shops, administration and weather quarters, and, if possible, some sleeping accommodations. In many instances it has been found advantageous to lay out an athletic field in conjunction with the airport, he pointed out.

In closing, President Earle broached the need for airports close to those colleges and universities which are now offering courses in aeronautical engineering. Only by actual experience in the air can the youth of the country gain a thorough understanding of aviation, he declared.

Typhoid Fever Epidemic in Olean

Abstract of Complete Report by Matthias Nicoll, Jr., State Commissioner of Health, to the Mayor and Common Council of Olean, N. Y.

DURING September and October, 1928, there occurred in Olean, N. Y., and its vicinity 212 cases of typhoid fever, from which up to November 3 there had resulted 15 deaths. The date of the earliest onset in any case is given as September 10. The date of the last onset of any primary case was October 20. The majority of the onsets occurred during the period September 22 to October 1.

Certain facts in connection with these cases were determined as follows:

A spot map of the cases showed a concentration of cases in the central and southern parts of the city. A comparison of cases and milk routes showed no excess of cases in proportion to the amount of milk delivered on any one route or by any one dealer. There was no evidence that any food served at a banquet or other public gathering was the cause.

City water, on the other hand, was used by all of the persons affected. It followed therefore, that the cause of the epidemic was in the water-supply. This conclusion was substantiated by the fact that there was an extensive outbreak of diarrhea in the city during the latter part of August and the early part of September; that is, two or three weeks before the typhoid outbreak. The number of cases of diarrhea is said to have been from 2,500 to 5,000, which indicates the probability of the pollution of the city water-supply at that time. Such outbreaks have frequently preceded waterborne epidemics of typhoid and, although they do not certainly forecast a typhoid epidemic, they do quite certainly signify that any typhoid outbreak immediately following such an occurrence is due to waterborne infection.

Investigation made by the New York State Department of Health revealed twelve persons not residents of, nor regular workers in, Olean who contracted typhoid fever following visits to the city. In the case of ten of these individuals definite information was obtained that they were in the city some time between August 25 and September 13, and that the only food or drink which all of these persons had in common with the residents of Olean was the city water.

It was also found that certain tests for the Bacillus Coli, made of the city water under the direction of the Water Department of the city, during July, August and the first part of September, suggested the presence of this organism, characteristic of sewage pollution, in 9 samples out of 16. In tests of samples of city water made by the County Laboratory on September 13, the presence of the same organism was demonstrated.

The Water-Supply of Olean

The public water-supply of the city of Olean is derived from two sources; namely, Olean Creek and the South Olean wells. The former, used since the summer of 1919, is filtered and chlorinated and pumped directly into the distribution system at a plant located in North Olean. Any excess over consumption is discharged through the system into the two open storage reservoirs on the hill to the south of the city. The water in Olean Creek is not of itself potable, since it receives general surface drainage and the effluent from the sewage disposal plants at Franklinville and Cuba located from 20 to 25 miles above Olean. The Water Commission of Olean, to insure the efficiency of the water purification plant, maintains a bacteriological and chemical laboratory for controlling the quality of the water discharged from this plant. The records of the daily tests made show a regular application of chlorine in suitable doses, and a uniform freedom from B. Coli as shown by the daily examinations of the purified water.

Water-borne Typhoid!

If negligence is proved, a city is held liable in civil suit for loss of life from water-borne typhoid. The court records contain many cases. Strict vigilance at all times is necessary to protect the water-supply of your city.

The South Olean well supply comes partly from a large open well on the south side of the Allegheny River and partly from twelve or more 6- and 8-inch tubular wells sunk in the low ground on the north side of the river. Formerly these wells were all located some distance from the river, but in recent years at least two of them became submerged on account of a change in the course of the stream. The Allegheny River at this point is grossly polluted by the sewage from the city of Olean. Raw sewage from nearly half of the city is discharged into Olean Creek and the river through a number of outlet sewers above the South Olean wells. This sewage constitutes a menace to the city water-supply through the possible pollution of the water-mains crossing these streams in case of a break in, or shutdown of, the mains, and through the pollution of the South Olean well supply, especially at times of high water.

This situation was called to the attention of the city authorities a number of times. When the plans for the proposed sewer system for the Boardmanville and East Olean sections of the city were approved in 1909, the desirability and necessity for the ultimate treatment of the sewage of the city was pointed out. Furthermore, the permit issued to the Common Council of the city of Olean on July 31, 1916, in connection with the approval of plans for sewers in the western portion of the city stipulated that on or before January 1, 1918, plans be submitted for the separation, interception and treatment of all of the domestic sewage of the city, with the exception of North Olean, which was already provided with a sewage treatment plant. No plant has been built.

The open well previously mentioned, and known as the "Cook Well," stands back from the river about 60 feet at a point where the ground elevation is 10 or 12 feet above the normal stage of the river. The well is 15 feet in diameter, and its bottom is 40 feet below the ground, the water-level being about that of the river, unless pumping is going on, when the level of water inside the well falls about 7 feet below that of the river. There is no evidence or suggestion, however, that the badly polluted water of the river finds its way into this well directly, except after seeping through the soil. It appears that at times of exceptionally high water in the river, such indirect entry might have occurred, but not during the months of September and October, 1928.

The tubular wells on the north side of the river are about 72 feet deep and pass through successive layers of soil, clay and sand into water-bearing gravel. The upper ends of these wells are connected in two groups by 10-inch screw-joint piping, the two connecting lines then leading across the river, on the river bed, into the Cook well, where a suction pipe operating through a vacuum pump draws the water out of the tubular wells into the dug well. From this well, containing a mixed

ground water from both north and south of the river, an electrically operated pump lifts the water to the two reservoirs already referred to, as holding excess water from the filtration plant.

Evidence of Pollution

For many years this well-water supply has been regarded by the State Department of Health as likely to become polluted, partly because the surface of the ground in which the wells are driven has occasionally been flooded when the river was high, and partly because of the certainty of pollution, should a break occur in the submerged piping system.

Accordingly, the State Department of Health repeatedly recommended to the Water Commissioners of Olean the necessity for continuous and effective chlorination of the South Olean well supply, the efficiency of treatment to be checked daily by color tests for excess chlorine. The records of the operation of this supply for the months of July and August *indicate* that tests for excess chlorine were made daily and that enough chlorine was added to give an excess of from 0.1 to 0.2 p.p.m. as recommended. However, it has been found that these tests were *not* made daily, but only at infrequent intervals. By failure to make these tests, evidence of pollution was not detected. The amount of chlorine actually used would probably have been sufficient had not heavily polluted river water entered the system, but it was entirely insufficient when that occurred. On the other hand, had enough chlorine been added to give the excess indicated on the records, the increased amount of chlorine required to produce such an excess would have immediately indicated pollution.

An examination of the automatic venturi meter records giving the amount of water pumped shows extreme fluctuations in the pumpage during the months of July, August and September. Apparently, the pump on these days, at one or more times, lost its suction intermittently and failed to deliver water. This is confirmed by the log of the Niagara, Lockport & Eastern Power Co., which supplies the power for operating the pump.

On September 8, a man fishing in the river heard, it is said, a sucking sound like the arcing of a high-tension power line in the vicinity of one of the submerged wells. This fact was reported to the Water Superintendent on September 10, who found the suction pipe of one of the wells broken, and immediately cut out this well.

Cause of Epidemic

Direct contamination of the city water-supply came through a break in the connecting pipe from the submerged well, so that the water-supply of the city became grossly polluted, which, coupled with the fact that additional chlorine was not added to care for this pollution, caused the epidemic of typhoid fever.

Responsibility

Section 46 of the charter of the city of Olean, prescribing the duties of water commissioners, provides as follows: "It shall be the duty of the commissioners to examine and consider all matters relating to supplying the city with pure and wholesome water. . . ." Direct responsibility, therefore, for the waterborne outbreak of typhoid fever in Olean lies with the Board of Water Commissioners:

First, because a submerged well was permitted to remain in the system.

Second, because notwithstanding repeated recommendations by the State Department of Health that daily tests be made to insure the use of an amount of chlorine sufficient to render the well water free from disease-producing bacteria, such tests were made only infrequently.

Third, because, although the records of one of their employees during the summer indicated at intervals the presence of bacteria of sewage origin, no evidence is available that such findings caused any change in the ordinary operation of the system.

Fourth, because the interruption and irregularities of the action of the pump, together with the results of the bacteriological findings in the water, did not cause the Board or its Superintendent to investigate the possibility of a leak or break in the piping system.

Fifth, because, when the break in the well pipe was brought to the attention of the Water Superintendent on September 10, he failed to notify the health officials of the city of the fact that the water throughout the city in pipes and reservoirs was contaminated.

Discovery of Diarrheal Outbreak

The records show that the County Health Officer on September 12 wrote to the District State Health Officer calling his attention to the diarrheal outbreak and on the same day called it to the attention of the City Health Officer. The District State Health Officer received the letter from the County Health Officer regarding the outbreak of diarrhea in Olean on September 13. On the following day he communicated by telephone with the city and county health officers, and made a personal investigation on September 17 and 18. Apparently, therefore, the first official recognition of the possibility that the diarrheal outbreak was waterborne was on September 12, on which date any recommendation to the public such as boiling the water would have had very little effect on the course of the subsequent outbreak of typhoid fever. In a measure this would appear to be substantiated by a careful study of the record of non-resident persons who registered at hotels in Olean subsequent to September 13 to and including October 1, comprising 1,666 individuals, among whom thus far no case of typhoid fever has been discovered; whereas, among a similar group of 1,463 persons who registered at Olean hotels from September 1 to 13, inclusive, two cases of typhoid fever have been found. In other words, when the pump at the South Olean well was stopped, probably on account of the dilution of the contaminated water by the purified water from the filtration plant, the water-supply did not, in so far as these records show, cause any cases of typhoid fever.

Recommended Step to Prevent Recurrence

In order to prevent in so far as possible any future outbreak of waterborne disease in the city of Olean, the State Commissioner of Health recommended that:

1. The Board of Water Commissioners be more diligent in the conduct of their offices.

2. Daily bacteriological examinations of the water-supply should be made and tests for excess chlorine should be carried out at least twice daily.

3. Reports of bacteriological findings and tests for excess chlorine should be forwarded daily to the county and city health officers; any findings which may indicate contamination of the water-supply should be reported *immediately* to the same officials.

4. Reports of outbreaks or unusual prevalence of enteric disease, required by the State Sanitary Code to be made immediately by the county and local health officers to the State Department of Health, should also be made immediately to the local water officials.

5. Considering the inadequate capacity of the North Olean filter plant, immediate steps should be taken to enlarge this plant in order to insure the delivery of a water-supply both adequate in quantity and of safe sanitary quality, not only for the present, but for many years to come.

6. Considering the limited capacity of the two chlorinators at the water filtration plant, two new chlorinators of adequate capacity to chlorinate effectively both the raw and the filtered water should be secured and installed at the North Olean filter plant without delay.

7. The present fence about the reservoirs should be replaced by a modern man-proof fence.

8. The South Olean wells should be abandoned as a source of public water-supply; however, an immediate survey should be made to determine the exact location of all wells in the system, and all wells which are now known or subsequently found to be submerged should be cut out of the system, so that, pending the enlargement of the water filtration plant, if a serious shortage of water occurs due to an emergency, it may be possible to use the South Olean supply temporarily, in which event the following precautions should be taken:

a. Tests should be made for leaks in the submerged piping system.

b. Pumps and chlorinators should be operated manually and a competent operator should be maintained at the pumping-station continuously during pumping.

c. The water should be chlorinated continuously during pumping so as to maintain an excess of not less than 0.5 p.p.m. of free chlorine.

d. Tests for excess chlorine should be made hourly.

e. Before the water is used, the health officers of the county and city and the State Department of Health should be notified in accordance with Regulation 15 of Chapter VII of the State Sanitary Code.

9. The general district health board should immediately authorize the appointment of a sanitary engineer qualified by experience and training, to serve as a full-time assistant to the district (county) health officer and to supervise all drinking-water supplies of the county, and other collateral matters, such as sewage disposal.

10. The city should appoint professionally trained personnel with suitable experience in waterworks and sewage-disposal plant operation to operate these facilities, and provide sufficient appropriations to insure their satisfactory maintenance.

11. That satisfactory detailed plans for the intercepting sewer and sewage treatment works be submitted to the State Department of Health for approval. That after approval of said detailed plans and not later than January 1, 1930, said intercepting sewer and sewage treatment works shall be constructed and put in operation.

12. The county health officer should be authorized to act as city health officer, or the city health officer should act as his deputy in fact as well as theory, and cooperate with the county health officer at all times.

Sealing of Cracks and Surface Defects in Concrete Pavements

By HARRY C. CARSTEN

SUPERVISOR OF REPAIRS, CONNECTICUT STATE HIGHWAY DEPARTMENT

THE Committee on Maintenance of the Advisory Board on Highway Research, National Research Council, Washington, D. C., has been engaged in an experimental study of the value of various bituminous crack fillers. Reports tend to show that no material has been developed that is satisfactory in all respects. Patented crack fillers of materials other than bitumen have been experimented with, but in general have proved unsatisfactory, being discarded principally because of excessive cost which is not considered justifiable in comparison with advantages gained.

Problem Different from Expansion Joints

It might seem that the sealing of cracks is the same as the sealing of expansion joints, but an expansion joint is straight, and of a width into which filler may be readily poured, while cracks are almost invariably irregular, and in the case of reinforced concrete very narrow, necessitating very careful work to fill properly. Carelessness will result in an unsightly condition, as the material used for this work should be of a lighter viscosity than that used in filling expansion joints, in order that the material may be induced into the narrow crack.

Very often a pavement is constructed of a design sufficient to carry an estimated increase of traffic for a term of years, and yet at the end of the first year it is found that traffic has increased to the capacity estimated for the term of years, which brings about increased maintenance. On the earlier constructed pavements there is naturally more cracking and surface maintenance, due, in part, to traffic heavier than that for which the pavement was originally designed. Also, methods and materials in constructing concrete pavements have been greatly improved, thus reducing maintenance on the newer pavements.

Too Little Thought Given to Subject

The sealing of expansion joints and cracks is very often done in a haphazard manner without consideration as to the quantity of material used. Such a joint or crack, if entirely filled during the early spring or late fall, and closing under the heat of the summer months, will discharge the bitumen upward above the road surface. Traffic spreads this in both directions from the joint or crack and an unsightly condition is created, especially so if material of improper density is used. A too light material will be carried by traffic for some distance from the joint or crack, in some cases causing impact, while a material of proper density projecting above the road surface is driven back by traffic to seal a joint opening through slab contraction. Experiments have been made with various tars and asphalts, and through a process of elimination many grades of these materials have been discarded.

Connecticut Practice

At present a special commercial asphalt crack filler is being used in Connecticut in filling and sealing expansion joints and large cracks, and a cut-back asphalt for the sealing of small cracks, which appears to be giving uniformly good results.

In the case of the small cracks the cut-back oils help in getting the material into the crack, and, being volatile, allow the asphalt to return to its previous density, preventing the spreading over the surface of the pavement when under slab expansion.

As the material used in sealing joints and large cracks is so different from that used in sealing small cracks, and the method of work is not the same, it has been found more efficient to seal joints and large cracks at one time, and later seal small cracks, thus making two operations of this work.

A Special Pouring Pot

It has also been found that in this work proper equipment is essential for efficiency. A special pouring pot has been developed by the Connecticut State Highway Department, although a similar pot is at present commercially available.

This pot is in the shape of a cornucopia, with a ball valve at the bottom, operated by the hand holding the pot; the weight of the material being directly under the hand, the pot is easily kept over the joint or crack to be filled. When the end of a crack is reached, the valve is permitted to close, preventing drip.

Traffic Control During Work

The thoughts of the men should be on their work, rather than on dodging passing vehicles. It is found that better work at less cost is the result. This may be accomplished to a large extent by working one-half of the traveled path at a time, keeping the equipment between the men and vehicles approaching on that side of the travel path.

Preparation of Cracks Before Filling

In sealing either joints or cracks, all loose concrete, dirt and dust should be removed, and moisture should not be present; otherwise, the bitumen will not properly adhere to the sides of the concrete and later may be whipped out by traffic, necessitating a repetition of the work.

A very effective way to clean joints and cracks is with the use of compressed air, using a small nozzle or air jet on the end of the hose. This will also aid in evaporating the moisture.

Heating the Filler

In sealing expansion joints and large cracks, the filler is heated in a portable heating kettle to a temperature of approximately 250° Fahrenheit and is drawn off into the pouring pot. The joints and large cracks are filled to within ¼-inch of the surface. Before this material has cooled, clean, dry grits up to approximately ¼-inch in size are applied. This material is obtained by screening trap rock fines through a ⅛-inch mesh screen. To apply the screenings, a container similar to the pouring pot with a flap shut-off instead of a ball valve is used.

In no case should grits or any other hard substances be used, that are in excess of approximately one-half the average width of the joint.

A quantity of these grits settles into the surface of the asphalt, which appears to give it more body, preventing the picking-up by vehicles, and to a certain degree the spreading over the pavement in the summer months and the chipping in the winter months.

Sealing Small Cracks

In sealing the small cracks, a smaller jet is inserted in the pouring pot, and cut-back asphalt is warmed in the kettle to a temperature of 100° Fahrenheit. Great care must be taken not to overheat, as a changed material will result. Also, the ordinary commercial cut-back asphalt is highly inflammable. Grits are not used in this work, but after the crack has been filled, clean sand may be sprinkled on top to prevent pick-up, which may occur, especially, if the sealing is done in hot weather.

Sealing Surface Defects

In sealing surface defects, a number of experiments have been in progress, using various kinds and grades of bituminous material and methods of application, to economically fill the pits where sealing has occurred. The results of the experiments have been such as to prove that asphalt has longer lasting qualities than tar; probably because of the quicker oxidation of the latter. We find however, that the use of asphalt has disadvantages in that the light grade, such as 65 per cent asphalt, is slow in curing, and in warm weather will be picked up by steel-tired vehicles.

A similar condition has resulted with the medium grades of ordinary commercial binders. The heavier grades proved unsatisfactory because of the difficulty of application in a sufficiently thin layer and of the tendency to chip in cold weather.

Up to the present time, we have had best results with cut-back asphalt high in volatile oils, which make the material more easily handled. These oils evaporate and the material cures quickly, thus preventing the picking-up or tracking of the material. Apparently some of the lighter oils are retained, so that the material remains reasonably plastic and does not chip.

Under traffic, the material wears off the high points, but the small pit-holes that would ordinarily hold water remain filled with the asphalt, protecting the surface from disintegration.

Preparing the Surface for Treatment

The area of pavement to be treated should be cleaned of all foreign material. If dust is left in the pit-holes, the asphalt will separate and ball. The asphalt should be heated to a temperature of approximately 100° Fahrenheit. The heating method must be absolutely controlled, as the fumes of the material are very inflammable, and if ignited when confined, will explode. The warmed material is applied with a hand pouring pot to the area to be treated, and is then spread with a rubber-edged squeegee, so that the distribution is about 0.10 of a gallon to the square yard.

As the material chills rapidly on contact with a cool pavement surface, squeegee work should immediately follow the pouring, so that maximum distribution will be obtained. A sloppy, unsightly condition will result if the material is squeegeed in a haphazard manner. A pleasing, workmanlike job may be obtained by squaring the patches; this will increase the cost of labor only a trifle, and the appearance justifies the effort.

When the bitumen is properly placed, a cover of a good grade of screened sand of about 12 pounds to the square yard is uniformly applied. This work, under favorable conditions, is completed at a total cost of 7 cents per square yard, in southern Connecticut.

Another method that has given uniformly good results is obtained by mixing this cut-back asphalt, in a mechanical mixer, with clean, dry screened sand in the proportion of 18 gallons of asphalt to a cubic yard of sand.

The area to be patched must be thoroughly cleaned. The pre-mixed material may then be spread to the desired thickness, and should be hand tamped. This method is used more generally during the cold months. For surface defects of sufficient depth, the Amiesite sand mix has given excellent satisfaction, although it is rather difficult, and sometimes impossible, to work this material in extremely cold weather.

In slab settlement, occasionally the settlement is not sufficient to warrant the cost of jacking-up the slab and raising the subgrade, and yet, without attention, a tremendous impact by heavy vehicles is developed, which, in some cases, is the cause of pavement cracks. In this case, building up to the high slab with either the pre-mixed cut-back asphalt and sand, or standard Amiesite with a seal coat of Amiesite sand mix, will greatly lessen the impact and save dollars of maintenance.

From a paper read before the Association of Highway Officials of the North Atlantic States, at Atlantic City, N. J.

Ancient Rome Had Many Modern Municipal Improvements—But No Street Lighting

IN essential municipal wants and in the means of meeting them, ancient Rome bears a close analogy to London, Paris, or New York. To secure the comfort and health of the city, and to prevent and extinguish fires, Rome in the course of time provided itself with a magnificent water-supply. Its system consisted of fourteen aqueducts whose aggregate length was 359⅓ miles, of which 304 miles were underground, often through mountains and along valleys, and 55 miles were above ground, the channel being carried on what is really a succession of triumphal arcades, sometimes rising to the height of more than 100 feet. As a sanitary necessity, the city constructed drains to carry off the sewage. The Cloaca Maxima is not only a large but a wonderful work —"an immense sewer, built twenty-five centuries ago, on unstable ground, under enormous practical difficulties, which still answers its purpose well, and which ranks among the greatest triumphs of engineering skill."

For the health and pleasure of the people Rome also supplied itself with public places of resort more adequately, perhaps, than have any of the great modern cities. Lanciani, as the result of explorations and of his own examinations and researches, says that "towards the end of the third century after Christ, there were in Rome eight *campi* or commons, green spaces set apart mostly for foot-races and gymnastic exercises; eighteen *fora* or public squares, and about thirty parks or gardens, which, first laid out by wealthy citizens for their private comfort or that of their friends, have been absorbed into the imperial domain by purchase, by bequest, or by confiscation. The city was not only surrounded and enclosed by them, but intersected by them in every direction." Modern cities have nothing fully answering to these forums or public squares, either in cost, area, or magnificence. They gave to the people of Rome more than twenty-five acres in extent for various public uses. In the public baths 62,800 citizens could bathe at the same moment.

Rome had also its Police and Fire Departments. The public safety was entrusted to a select body of 7,500 men, whose function corresponds to that of the 9,000 policemen of London. The Roman policeman, however, performed the double duty of fireman and policeman.

In a most important particular, however, Rome suffers by comparison with modern cities. Its public places *were not lighted*. All business closed with the daylight. The streets at night were dangerous. Property was insecure. No attempt at public illumination was made. The idea does not seem to have occurred to them. Persons who ventured abroad on dark nights were dimly lighted by lanterns and torches. Its condition was similar to that of London two hundred years ago, so graphically described by Macaulay.

—From John F. Dillon's "Introductory Historical View" in "Municipal Corporations," fifth edition.

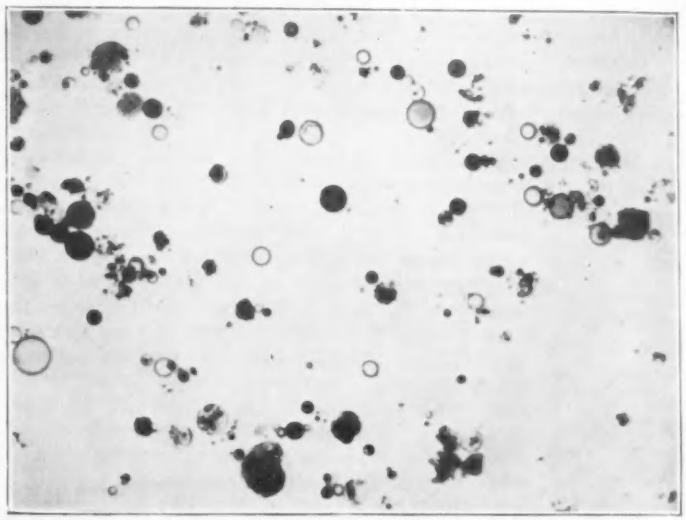
Abating Black Smoke Will Not Solve the Problem of Atmospheric Pollution

The Smoke Nuisance Can Be Abated Only by Preventing the Ash and Sulphur Acids from Being Discharged Into the Air

By R. D. MacLAURIN, Ph.D.
Commissioner, Trade Waste, City of Cleveland, Ohio

THE atmosphere is polluted by the dispersion therein of solid particles of various forms of matter in a fine state of division; by gases such as hydrogen sulphide, carbon monoxide, sulphur dioxide, oxides of nitrogen; by mineral acids such as sulphuric, hydrochloric, hydrofluoric, nitric, and many organic compounds. The sources of atmospheric pollution are as varied as industry itself, for varying quantities of solid, liquid and gaseous products are discharged into the atmosphere from practically all industrial operations.

In controlling atmospheric pollution, many industrial operations may be modified to prevent a part of the resulting pollution, and in other instances dusts, fumes and noxious gases may be collected by suitable processes. From certain operations valuable products may be recovered which pay dividends on the cost of recovery equipment, and in other instances the offending impurities have no commercial value. A good illustration of the latter is the so-called smoke nuisance arising from the burning of coal. A brief analysis of this subject may be of interest, as there is a great deal of misunderstanding regarding what may be accomplished from the standpoint of preventing atmospheric pollution by what is commonly known as smoke abatement.



MICROSCOPIC EVIDENCE OF WHAT MAY BE IN THE AIR WE BREATHE
Ash particles magnified 500 diameters. Photomicrography by Dr. C. H. Saylor

Atmospheric Pollution Not Abated by More Efficient Burning of Bituminous Coal

The general conception is that the abatement of black smoke means clean air as the result. It will be shown that such a conception is largely erroneous. On the other hand, substantial progress in preventing atmospheric pollution and securing clean air can be accomplished, first, by collecting the smoke emitted from burning bituminous coal for industrial operations, and a greater utilization of ashless fuels for domestic purposes; and second, clean air can be obtained for the home, office, school, and industrial uses by utilizing efficient methods for dust and smoke removal. The latter method of obtaining clean air will take precedence for the time being over the former, owing to the apathy of the general public and lack of appreciation by manufacturing interests of the damage caused by atmospheric pollution.

If the object of smoke abatement, or smoke abatement legislation, is merely to burn coal more efficiently, then some degree of success has been attained from the standpoint of economy for the manufacturer or user. But if, on the other hand, the object sought is to prevent atmospheric pollution, then the results are of doubtful value. Unfortunately, a more efficient burning of bituminous coal does not mean the abatement of atmospheric pollution, and when all known facts regarding the burning of coal in various forms are taken into consideration, the results all point in the same direction, namely, that atmospheric pollution is intensified rather than diminished when more efficient methods of combustion are employed. In other words, the mere abatement of black smoke does not decrease the total number of nuisance particles emitted from chimneys, but rather increases the number. Smoke abatement as at present constituted has an economic and psychological value, but the pollution benefits are visionary rather than actual.

The components of smoke emanating from bituminous coal are carbon, ash, tar, ammonia, and sulphur acids. Efforts have been made by a number of investigators to arrive at a quantitative conception of the carbon ash and tar content by making what is commonly called soot-fall determinations. These determinations are made by collecting in cans, or other receptacles, the heavier particles of smoke and dust which settle out by gravitation, and then analyzing the deposit for its various ingredients. It is recognized by all familiar with quantitative chemical analysis that such determinations give only approximate values.

The futility of the alleged benefits derived from the enforcement of the black smoke ordinance during a ten-year period is well illustrated by the following results published by Dr. H. B. Meller of the Mellon Institute, Pittsburgh:

SOOT-FALL IN TONS PER SQUARE MILE

	Tar	Combustible Other then Tar	Ash	Iron Oxide	Total
August to June, 1912–13	9 22	288 3	402 7	237 6	937 8
August to June, 1923–24	2 87	464 3	557 3	279 9	1304 4

Regarding the above data, Dr. Meller comments as follows: "Only a small percentage (usually less than 3 per cent and in Pittsburgh about ¼ of 1 per cent in 1923-24) of the solid deposit consists of tar, which is the criterion of black smoke. Yet this is the only part of the products of combustion which it is attempted to control. If a chimney is not emitting dense smoke, it is considered to be a good chimney regardless of the amount of coke, ash, iron, sulphur acids,

et cetera, it may be emitting. And which is the more harmful to fabrics, to buildings, to health?" It should furthermore be noted that "soot-fall" is a very inaccurate yardstick by which to measure atmospheric pollution, as it represents a very small percentage of the quantity of impurities which remain in suspension in the air. Additional compilation of data regarding soot-fall or of the quantity of smoke particles in suspension in air will have little or no practical value, as such data do not bear on the solution of the air pollution problem, which is primarily one of smoke collection and air cleaning.

Removal of Small Particles the Crucial Test

Viewing this subject from the standpoint of air cleaning, the crucial test for equipment designed for such a purpose is determined by its ability to remove the small particles which remain suspended in air more or less indefinitely. Investigations conducted in various countries and confirmed in our laboratory reveal the fact that the size of suspended solid impurities ranges from 0.2 to 1.5 microns. There are a few larger particles and aggregates, but the percentage by number or weight is relatively small compared with the multitude of small ones. Consequently, any method contemplated for cleaning air which fails to remove the small particles falls far short of being satisfactory for ventilating purposes and many industrial uses.

There is another important factor in air cleaning which must be considered, and that is the quantity or concentration of particles in the air to be cleaned. This quantity varies greatly during a 24-hour period and from day to day. This is due to changes in weather and other conditions. In a manufacturing city such as Cleveland, the quantity of suspended smoke in the air in the business or downtown district will range from 1 to 6 milligrams per 100 cubic feet. Obviously, then, the efficiency of air-cleaning equipment treating such air will be more or less relative, irrespective of the design of the device. There are many air-cleaning devices on the market which are guaranteed to remove 98 and 99 per cent of atmospheric impurity. However, no such efficiency is obtainable, nor should such be expected. It is desirable, however, to have comparatively clean air for many uses in spite of the lack of a definition for such. Nor will the writer at this time attempt to define clean air for any use. There is, however, a wide spread in cleanliness between air containing 10,000 particles per c.c. and that containing 100 particles per c.c.

20,000 Tons of Air-Borne Impurities Per Year Carried Over One Square Mile

In this connection, it may be of interest to visualize an approximate estimate of the extent of atmospheric pollution due to suspended solid particles. An average value for such solid particles in the business district of Cleveland would be about 3 milligrams per 100 cubic feet. The mean velocity of the wind is 11 miles per hour, so the quantity of impurity thus carried over an area of one square mile and 200 feet in height per year would be 20,000 tons. The actual amount transported by the wind is probably greater than this, as data regarding concentration of dust particles indicate that there is not much variation in the first 5,000 feet from the ground. In any case, it is apparent that there is a great deal of suspended impurity in city air, and also that it greatly exceeds that which settles out by gravitation, and is responsible for a large part of the damage caused by atmospheric smoke.

Smoke has been defined as an aerosol containing particles less than 0.3-micron. Technically, the term "smoke" has no reference to color of solid particles, but merely has reference to particle size. It is impractical, however, to draw any sharp line of demarcation between the terms smoke, fume or dust, when speaking of the emanations resulting from the burning of coal. The term "smoke" when used colloquially means black smoke which is offensive to the eye. When combustion is complete, chimney smoke appears gray, but from a nuisance standpoint is just as damaging. This fact has been proved in connection with the burning of powdered fuel wherein combustion is complete. Consequently, the popular conception that when black smoke is abated we shall have clean air, is quite erroneous and at variance with the facts.

Hopelessly Inadequate Legislation

Conclusive evidence has been presented to prove that legislation contemplating the abatement of the so-called smoke nuisance is hopelessly inadequate. It is perfectly obvious that, as long as bituminous coal is used as fuel, a large percentage of coal ash will be emitted into the air. This is brought about inevitably by the fact that the more efficiently coal is burned, the more ash is discharged into the air. In other words, atmospheric pollution is increased by increasing combustion efficiency in boiler-plants. With these facts in mind, what is the object of talking about abating the smoke nuisance by merely abating black smoke? The smoke nuisance positively cannot be abated nor can any significant portion of it be abated by any such method.

The smoke nuisance can be abated only by preventing the ash and sulphur acids from being discharged into the air. How, then, may this be accomplished? That part of the smoke problem which pertains to solid particles can be solved by collecting the ash or smoke. Ash is being collected from a few power-plants in America at the present time, and many similar installations have been in operation abroad for some considerable time. Three methods have been employed, namely, electrical precipitation, centrifugal collecting, and bag filtration. It has been demonstrated that 90 per cent or more of fly ash from burning powdered coal can be recovered. In the accompanying photomicrograph the ash particles are magnified 500 diameters and the average particle size is about 5 microns. It will be observed that the particles are mostly spheres formed by the fusion of the ash contained in each little particle of powdered fuel. There is no doubt that smoke can be collected and atmospheric pollution substantially reduced from what it is at the present time. As far as the writer is aware, sulphur acids have never been collected from coal smoke in any form. Yet this can be accomplished by neutralizing the sulphur acids with hydrated lime and then collecting the lime sulphite and sulphate together with the coal ash. Sulphurous acid is probably the most damaging constituent of smoke, as it is responsible for a considerable portion of the damage to buildings and vegetation.

Investigations Under Way in Cleveland

Recognizing that smoke and dusts from all sources will continue to pollute the atmosphere for some time to come, the writer is of the opinion that there will be an increasing demand for clean air in the home, office, and store. To meet this demand we are investigating all types of equipment used for the purpose of providing clean air for the above-mentioned purposes. This can be accomplished in a practical way, and in the near future modern homes will be equipped with air-cleaning equipment and automatic humidity control. Lack of humidity, lack of proper temperature control, and dirty air in homes and offices is responsible to a considerable extent for colds and other respiratory diseases during the winter months. At the present time there are no standards for clean air, nor is there a recognized standard method for determining the concentration of dust particles in our breathing air. Investigations are in progress in our laboratory with the object of determining suitable standards for clean air and a satisfactory method for testing them.

It is not generally known how dirty

our breathing air actually is, nor, on the other hand, to what extent dirty air can be cleaned in a practical way. The clean-air movement will take place first in the homes, schools, stores, offices and public buildings. Then when the benefits are realized, and also the fact that air can be cleaned, there will be a public demand that this dirt be collected at its source. Obviously, smoke and dirt can be collected at its source at a much lower cost than after it has been dispersed into a large volume of air, thus requiring the cleaning of an infinitely larger quantity of air than would be necessary at the source of contamination.

This method of procedure is putting the cart before the horse. Nevertheless, that is what is occurring at the present time and will continue until the various phases of smoke prevention and air cleaning are more thoroughly comprehended.

To the Editor of THE AMERICAN CITY:

The F. A. Bartlett Tree Expert Co., of Stamford, Conn., has used a method of locating shade trees similar in some respects to that used by the city of Syracuse, N. Y., which was described in your January issue.

Besides a written description, a paced survey map showing the actual location of the trees with relation to buildings, walks, etc., is included. Each tree is numbered on the map and listed on the opposite page with information as to size, species, general condition and suggestions for improvment.

Such surveys have been made of Dartmouth College, Tufts College, Middlebury College, University of New Hampshire, and St. George's School, Newport, R. I.

E. A. CONNELL.

More Ways of Keeping Shade-Tree Records

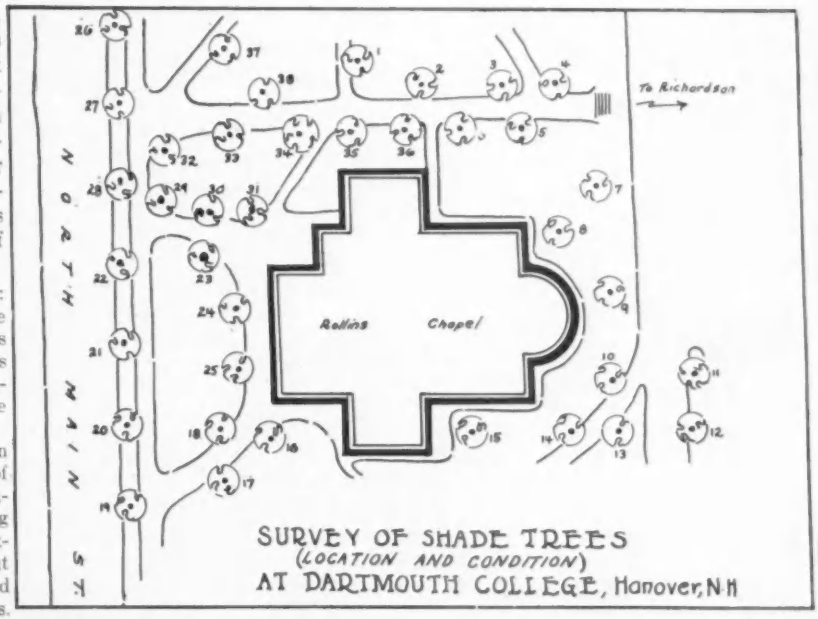
THE article in THE AMERICAN CITY for January, 1929, descriptive of the distinctive street tree census record developed in Syracuse, N. Y., and used in recent years for keeping a complete history of individual trees, has resulted in bringing to the editorial desk the two following letters, each recording methods somewhat similar to that in Syracuse, yet differing from it in interesting details. The three taken together afford evidence of the increasing importance attached to ornamental shade trees as a whole and to the conservation of individual trees:

To the Editor of THE AMERICAN CITY:

In your January issue I notice an article about tree record cards on page 164. This article in the opening paragraph states that "it is believed to be the first complete record of its kind ever to be adopted."

Eight years ago I caused to be taken a "tree census" giving the diameter of tree, location, condition, etc. This census was for the purpose of ascertaining the exact number of trees on the parking spaces, parks and squares throughout the city. The completed records showed that there were 18,000 city-owned trees. Although the Syracuse article described a method far improved over my old tree census record, yet I believe that the one I am using now is in several ways more simplified. I am enclosing one of my blanks.

GEO. H. REED, Superintendent,
Park Foresty Dept., Lynchburg, Va.



SHADE-TREE MAP (ABOVE) AND LIST (RIGHT) PREPARED IN MAKING THE SURVEY OF TREES AT DARTMOUTH COLLEGE

Street Dartmouth College Date July 1928

Tree No.	Species	Diameter	Condition	Remarks
1	Elm	22"	F	b-x-s-o-f
2	"	24"	P	b-c-cv-p
3	Maple	16"	G	f-p-gr
4	Pin oak	14"	P	cv-c-b-gr-f
5	Elm	36"	P	s-f-p-x
6	Spruce	20"	P	w-p-f
7	Oak	24"	G	f-p-c-b-cv
8	Oak	18"	G	f-p
9	Gingko	10"	F	cv-f
10	Elm	28"	F	c-b-w-s-x-o-f
11	"	32"	P	cv-s-w-b-f-p
12	"	30"	F	p-f-gr
13	"	38"	G	f-p-gr
14	Maple	24"	F	p-f-b-gr

Symbols
b-brace
c-cable
f-feed
gr-girdling root
cv-cavity
s-slime flux
w-winter injury
p-prune
x-split crotch
o-frost crack

CITY OF LYNCHBURG, PARK FORESTRY DEPARTMENT—TREE RECORD

STREET _____ BLOCK No. _____ FROM _____ TO _____ No. OF TREES _____

Street No.	Width of Parking	Caliper	Distance Apart	Variety	Remarks	CONDITION OF TREE AND DATE INSPECTED											

LEGEND: Trunk Cavity, T. C.; Dead Wood, D. W.; Low Branches, L. B.; Wire Interference, W. I.; Good, G.; Fair, F.; Bad, B.; Pavement, P.; Sidewalk, S.

No. DWELLINGS ON BLOCK _____ No. PLACES OF BUSINESS ON BLOCK _____ TREES IN PAVEMENT OR SIDEWALK _____

LYNCHBURG, VA., KEEPS A COMPLETE TREE CENSUS. ONE OF THE PRESENT BLANKS

As We Cannot Bring Back the "Old Swimming Hole," Let's Have Plenty of Parks, Playgrounds and Municipal Swimming Pools!

Cartoon by courtesy of the New York Evening Post

MORE ADEQUATE FACILITIES FOR PUBLIC RECREATION WOULD MEAN MORE LIVE CHILDREN—AND FEWER DEAD ONES

Readers wishing to use this illustration (or others published in this magazine) in their local efforts for civic improvement are invited to communicate with THE AMERICAN CITY

A City Block—How Wide? How Long?

Five Questions as to Its Dimensions, Interior Arrangements and Surroundings Which Deserve More Careful Study Than They Ordinarily Receive

By J. FRANKLIN BELL

Lt.-Col., Corps of Engineers, Engineer Commissioner D. C., 1923-7

WE draw up the most detailed plans for our buildings, but almost ignore our city block plans. See if you can answer these:

(a) How long should a block be?

(b) How wide should a block be?

(c) What should be the interior arrangement of the block as to subdivisions and alley plans?

(d) How wide should the abutting streets be, and what distribution should there be of the public space for paving, sidewalks, and grass plots?

(e) What principles govern in order to secure satisfactory intersections at the block corners?

No, these are not questions to be left to the real estate developers, though as much freedom of action should be left to them as is practicable and still protect the public's interest. And though the old stock answer, "That will depend on circumstances," applies to some extent, these problems must be met, and it is better to meet them squarely than to let some draftsman in a real estate office butcher the city plan to meet his idea of how to get the most out of it for his employer or to comply with some custom of the service established in a city surveyor's office before the automobile was invented and about as obsolete now as it would be to provide for Roman chariots at an automobile show.

How Long Should a Block Be?

Formerly about 10 blocks per mile for residential areas was customary, though there seemed to be no established rule. With the automobile in general use now, 5 blocks per mile will meet the public needs better. The result will be a saving to the public of the construction and maintenance of half the cross-streets, and the property owners will have additional lots for sale, or use, and have to pay lighter assessments. If deemed desirable, rights-of-way can be secured where the omitted streets would have been, sidewalks constructed, and the public space devoted to playground and park purposes.

There is nothing new, or visionary, about this. It is being done with satisfactory results, but few people seem to have thought about it.

The through traffic on the longitudinal streets will benefit by the change, as there will be but half as many cross-street intersections. The cross-street traffic is usually light, and the needs will be met by half as many streets as are now provided. Where there is heavy cross-traffic, an occasional wide boulevard will serve the traffic needs better than having it follow several cross-streets.

How Wide Should a Block Be?

The block should be wide enough to provide for the depths of two lots and an alleyway 20 feet wide. I see no sense in cutting alleyways down to the widths usually provided. The alleyways should be wide enough so that automobiles can pass and can turn in and out of garages without difficulty. The few extra feet that will be taken off the back edges of the lots by having a wider alley, will detract little, if any, from the value of the lots, and may add to the scenery. In general, the back yard should be deep enough to provide for a garage and as much space for grass, vines, shrubbery, and flowers as the occupants of the lot will keep in proper condition. There need be no space for the stables, storage, and chicken-houses, board fences, and other nondescript structures that littered up the back yards a generation ago and still persist to worry our fire marshals.

That American Cities May Be Sensibly Planned,

science must replace tradition in street and block design. In this article Colonel Bell asks five questions as to a city block, and gives his answers to them. Because of the wide variance in ideas on these questions,* THE AMERICAN CITY *has submitted the article for comment to a few engineers and city planners who have given the subject special study.

Two comments follow this article, and others will appear in an early issue.

It is regrettable that each permit to construct a garage cannot include a provision that the builder must plant two rose bushes alongside it. Much of the interior of most residential squares is more or less wasted space. Normally, a block 220 feet wide, providing for two lots 100 feet deep and an alley 20 feet wide, will meet the needs of an ordinary residential neighborhood, though deeper lots should be provided in neighborhoods where the owners can afford to maintain the grounds attractively. In Washington, a most disreputable-appearing interior of a square was converted into an attractive playground.

What Should Be the Interior Arrangement of the Block as to Subdivisions and Alley Plans?

I see no reason why all the houses should not face on the through streets, and have the alleyway lead straight through between the cross-streets. It is manifest that the traffic conditions will be better with such an arrangement, and the collectors of garbage, trash and ashes would certainly welcome the change. Moreover, the back yards will be opened up better to light, air, and view, and, being opened up to view, it is probable that they will be made more attractive in appearance.

Advantage should be taken of special situations to provide interior courts, or parkways, for the sake of variety. The break on a street frontage where the corner house faces on a different street from the adjacent house can seldom be made without some loss in land values, and the appearance of the square and the alley layout is not good. It also appears manifest that water, sewer, gas, and electric service could be provided more economically from these through alleyways, and installation and maintenance could be accomplished with less nuisance to the traveling public and the property owners.

The alleyways could be paved, merely improved, or left unimproved, depending on the nature of the soil and the needs and wishes of the abutting property owners.

How Wide Should the Abutting Streets Be, and What Distribution Should There Be of the Public Space for Paving, Sidewalks, and Grass Plots?

Where it is manifest that the street under consideration will carry a very heavy traffic in the not distant future, the curbs should be set about 60 feet apart, and a 20-foot strip on each side paved, leaving the central 20 feet for future development. It is much cheaper and better to make provision for the future in this way than it is to pave a street 40 feet wide and then have to set

the curbs back, destroy the trees, and repave the whole street to secure proper drainage when the need develops later.

If the need for wider paving does not develop, a 12-foot width of the central strip can be developed into an attractive parking, with shrubbery and grass, leaving the paved strips 24 feet wide. A 20-foot width curbed on each side is too narrow, but there is little objection to the 20-foot paving recommended above, so long as there is no curb along the outer edge and cars can turn out onto the central strip in case of necessity.

Needs for paving over 60 feet wide do occur, but only for special boulevards which need not be considered here.

When it is apparent that the street will be an important traffic artery, but not subject to the heavy demands justifying a 60-foot width, the curbs should be placed about 40 feet apart. This should be the normal width for longitudinal streets. This width will provide for two lines of traffic in each direction —slow-moving and parked cars along the curbs, and rapidly moving cars in the center.

For cross-streets not subject to heavy traffic, a width of 30 feet is desirable, to provide for parked cars on each side and a central traffic lane wide enough for a car to pass freely without undue danger of side-wiping the parked cars. For less important cross-streets, a width of 24 feet will do, but in case of doubt make it 30 feet. No curbed street should be less than 24 feet wide; for uncurbed street and alley paving, a width of 20 feet will suffice, because in case of emergency a car can turn out on the berm, and in the alley the traffic will move slowly enough so that 20 feet is wide enough.

Along the curb should be an unpaved tree space from 3 to 5 feet wide, and hardwood trees such as elm, red and pin oaks, Norway maples, etc., should be planted and maintained by the municipality. Softwood trees, which appeal to real estate developers and some property owners because they are quick growers, are to be avoided; they are not so hardy and long-lived as the hardwood trees, and the ultimate effect after some destructive storms is not satisfactory.

Property owners are to be encouraged to plant trees on their lots if conditions are favorable, but the trees along the curbs should be planted by the municipality. Of course the type of tree to be planted depends somewhat on climatic and other conditions. The above comments, however, apply for most of the cities of the United States.

Next to the tree spaces sidewalks should be laid. People do not walk much since the automobile came into general use, and there is no reason for laying a wide sidewalk in a strictly residential neighborhood. A sidewalk 6 feet wide will meet the needs of most neighborhoods, and some variety in treatment is to be encouraged rather than discouraged.

The width of the grass plots, or front yards, between the sidewalks and the building line should be controlled by having the land in public ownership, or by requiring the property owners to dedicate a building restriction line when the subdivision plot is filed. The courts are full of suits due to the fact that this important consideration has been left to private agreement and control, with resulting damage to private property, and the public interest has suffered by the jagged appearance of the building developments along the street when some property owner built a new structure forward of the agreed-upon building line. Except in a pretentious neighborhood, there is little reason for a deep front yard. A neat, narrow grass plot, with shrubbery artistically banked around a cottage, appeals more to the modern taste than a large ill-kept yard around a big house.

What Principles Govern in Order to Secure Satisfactory Intersections at the Block Corners?

I have no intention of trying to cover this subject comprehensively. There are too many angles to it, and too many special plans applicable to unusual conditions. Right-angled intersections are best, and the corners of the curb should be cut back so that an automobile can follow the curb line and not have to swing out into the street it is entering to make the turn at a reasonable rate of speed.

If special plans for plazas, places, squares, round points, etc., be made, be sure they are properly designed for traffic distribution and are not traffic congestion centers. Small round points are usually traffic nuisances. They interfere with the free flow of traffic, and one is often confused as to what direction oncoming traffic is going to take. Usually, so many streets are led in at various angles that any attempt to provide a smooth flow of traffic is hopeless.

A bit of green may be added to the scenery by the round point, and that is always desirable; but it would be better to spend the same amount of money for park and playground areas in places that the children can reach without risking their lives.

If more than two streets must meet at an intersection, work up a traffic plan and be sure to secure enough area so there will not be traffic congestion.

Two Comments on the Foregoing Article

From Russell V. Black, Director of Plans and Surveys, Regional Planning Federation of the Philadelphia Tri-State District:

Colonel Bell's plea for clearer thinking and more scientific approach to the problem of lot and block planning is a timely one. While during recent years increasing thought has been given to the matter of street planning, there has been surprisingly little progress in common practice. The automobile's demand for wider streets has been more or less neutralized by the higher cost of paving. Tradition and inertia have kept us pretty much to the block lengths and street widths of carriage days. Good intention has frequently been hindered by the lack of city plans, which has made it next to impossible to predetermine street uses and widths. All these factors, however, are but further reason for heeding Colonel Bell's suggestion toward better street design.

In detail, there are some points brought out by Colonel Bell with which my observation places me at variance. For instance, 10-foot traffic lanes, from which Mr. Bell has built up his 30-, 40-, and 60-foot roadways are not generally considered to be economical or uniformly necessary for city streets. An 8-foot lane appears to be sufficient for parked vehicles and in some instances sufficient for slow-moving vehicles. Nine-foot traffic lanes are sufficient for most city traffic. Ten-foot lanes are required only for heavy use usually involving a large percentage of bus and truck traffic. Paved roadway widths, it seems to me, therefore, should be built from 8-, 9-, and 10-foot units. The 10-foot lane appears to be uniformly desirable only in handling the fast-moving traffic on main country highways. The adoption of a uniform 10-foot lane for cities would inevitably involve a great waste in paving cost and in maintenance. There are evidences also that Colonel Bell's minimum paving width of 24 feet might under certain circumstances be reduced to 20 or even 18 feet.

Further, I would question the desirability of devoting as much as 20 feet of width to alleys in residential districts. An alley of 12- or 14-foot width, all of which must actually be used, is less likely to be cluttered up and is less expensive in land and maintenance. Access to garages can be had from the narrow alley if garages are properly placed.

Some of the land suggested by Colonel Bell to go into street paving and alleys might well be devoted to a greater allowance for tree space. His suggestion of a planting strip of from 3 to 5 feet in width is quite inadequate. Standard trees should never be placed in a planting strip less than 5 feet wide without some special protection such as iron grating, and a space of from 7 to 15 feet in width is frequently desirable.

My general reaction to Colonel Bell's discussion it that, while forward thinking

is greatly needed, it would be unfortunate to have this thinking assume too much of the direction of standardization. In land subdivision there are a thousand conditions and circumstances which must be met, each requiring a different solution as to lot and block sizes. The subdivider's mind should be kept open for such experimentation as is now being undertaken by the City Housing Corporation at Radburn, N. J.

From Jacob L. Crane, Jr., Engineer and Town Planner, Chicago:

1. *How long should a block be?*

It is obviously not sensible to establish a single standard for block length under all conditions. However, giving due consideration to traffic movement, fire protection, cost of street improvements, and access to property under normal American conditions for residential property, a block should be not less than 600 feet long nor more than 1,300 feet long, or within the range of eight blocks to four blocks per mile. In our more recent work we favor longer blocks up to one-quarter mile in length along major thoroughfares.

2. *How wide should a block be?*

Here it is even more difficult to establish standards than on the question of block length. The lot depth, of course, generally establishes the block width, but suitable lot depth varies so greatly with lot width, character of use, character of land, cost of land, and the presence or absence of an alley, that it is impossible to set any figures as standard. However, it is my opinion that the hundred-foot lot depth standard suggested by Colonel Bell is not sufficient. In fact, under modern city conditions, my feeling is that residential blocks should be deep enough to permit sizable playgrounds within each block, which requires a depth of not less than 250 feet and preferably much more for the block. Lot depth or block depth does not, as with lot width, add greatly to the street improvement cost, which is a controlling factor in city lot prices.

3. *What should be the interior arrangement of a block?*

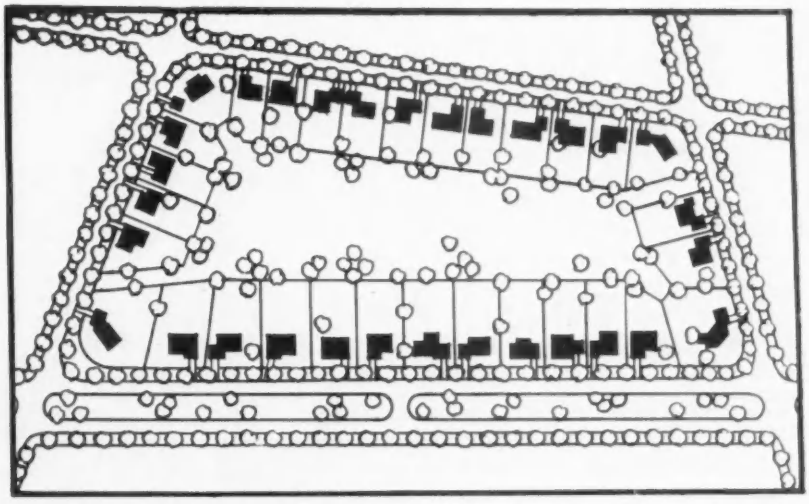
For reasons of convenience in street access, safety to children, provision of playground space, better outlook for houses, better access to garage, and economy in development, I advocate turning the blocks inside out, putting the service quarters toward the street and the living quarters facing away from the street, looking out upon an interior playground. The sketch reproduced herewith illustrates such an arrangement in a land operation now under development.

4. *How wide should the abutting streets be?*

This is like asking, "How big should a pair of shoes be?" and the answer is, "Big enough to fit." In our work, street widths have ranged all the way from 37 to 208 feet, and in designing them to meet specific local conditions the widths vary by small increments from one section of the same street to another. Instead of Colonel Bell's suggested standards for the design of streets in cross-section I would suggest the following: sidewalks, except in business property, should be placed 1 foot outside the property line and should range in width from 3½ to 6 feet; parkway strips should be not less than 7, preferably not less than 10, and, better still, not less than 12 feet in width, and should range up to much greater widths for high-class residential streets or parkways where the houses face on streets; the pavement design should be based on an 8-foot width for parallel parking, 18 feet for diagonal parking, 9-foot lanes for slow-moving traffic, and 10-foot lanes for through traffic; center parkway strips should not be less than 24 feet wide nor less than once and a half the width of the wider flanking pavement. With these cross-section standards and a definite anticipation for the use of the property and the traffic flow, and with recognition of limiting conditions such as existing buildings, topography, and street development cost, a rational street design may be made.

5. *What principles govern at intersections?*

The principles named by Colonel Bell seem sound to me, but, as he suggests, the individual situation requires specific design, so that it is possible to lay down only the most elemental principles.



A BLOCK TURNED INSIDE OUT, WITH LIVING QUARTERS FACING ON A INTERIOR PLAYGROUND

A Million-Dollar Recreation Dream Comes True

THE Metropolitan Park Commission of Boston has on its present program the spending of a million dollars for the development of the Charles River Basin as a great water park and playground, which is to be the gift to the people of Mrs. James J. Storrow in memory of her late husband.

Both Mr. and Mrs. Storrow have been prominently connected with recreational development activities, not only in Boston, but in more than a local way.

"In making this present gift," says a recent article in *The Playground*, "Mrs. Storrow is carrying out the vision which her husband dreamed and carried toward a practical realization more than 25 years ago. Boston's Back Bay, before the creation of the Charles River Basin, was unsanitary, a tidal mud-flat. In 1903, after a five-year fight led by Mr. Storrow, the Charles River Dam was constructed, giving the cities of Boston and Cambridge an open park area of 1,000 acres, the lower portion situated in the heart of the most congested district with a beautiful water area along the Charles River back to Watertown. The sanitary and the esthetic promises of the Charles River Dam Commission were fulfilled. A constant, beautiful stretch of water appeared where formerly, at low tide, were mud-flats. Pollution was guarded against, parks and boulevards were laid out, and the whole Charles River Basin became an esthetic delight.

"Mr. Storrow and the other leaders, in their dream of twenty-five years ago, had, however, looked forward also to an intensive recreational use of the Charles River Basin. They expected to see the same kind of recreational activities—bathing, boating, skating—which citizens of Hamburg have in the Alster Basin and which the English enjoy in the Thames above London." Development plans as carried out made this impossible. Partly due to the perpendicular walls surrounding the Basin, the water is extremely rough most of the time. Various plans have been considered by a legislative commission for providing landing-steps, boat-houses, bathing beaches and bath-houses in parts of the basin, and Mrs. Storrow had contemplated giving her assistance to such programs. Her present gift, however, is to be used for adequate recreational development for the whole basin in accordance with plans yet to be determined upon, "thus carrying out the vision of Mr. Storrow when he fought for the creation of the basin a generation ago."

Oakland Municipal Airport

A Rapidly Developing Air Terminal Which Is Well Planned for the Future

By G. B. HEGARDT

CHIEF ENGINEER AND GENERAL MANAGER OF THE PORT OF OAKLAND, CALIF.

IN the early days of the present rush of aeronautical activity, little distinction was made between a landing field and an airport. But when the first stages of this remarkable development passed, the need of terminals, adequately equipped to accommodate the commerce of the air, became clearly apparent.

The Oakland municipal airport, located on the continental side of San Francisco Bay, is one of the recognized air terminals of the United States, and is noted internationally for its modern development plan and its management. To date, this airport has cost the city of Oakland approximately $1,342,400, a sum which is considered small when the future importance of the project is contemplated.

Heavy Commerce at Airport

During 1928, there were 66,432 plane landings recorded at the municipal airport, and 40,691 passengers were carried and 8,297 student flights made. The gross revenue accruing to the city of Oakland from the operation of the airport totaled $35,365.64 and was derived from hangar rentals, commercial operation fees, and concession charges. Transient plane landings at the airport during the year numbered 3,443, and 4,732 passengers were carried in these transient ships.

The municipal airport is an integral part of the city's harbor and is operated as a municipal terminal facility by the Board of Port Commissioners. This is a non-political appointive body which has sole jurisdiction in matters pertaining to the development of the Port of Oakland. In planning and equipping the airport, the Port Commissioners benefited by the counsel of representatives of the War Department and the Department of Commerce.

A comprehensive plan of development, looking well into the future and basically sound from engineering and aeronautical standpoints, was adopted before construction started. Thus, every new airport structure fits into its allotted space, filling a particular need of the present and marking one more progressive step in the realization of the completed project. The original airport area of 825 acres was purchased outright for the sum of $769,000. Subsequently, when negotiations were under way for rights to a waterway to the airport, the owners of the several thousand acres of industrial land adjacent to it gave the city 20 additional acres, in return for the promise that a dock would be built at the airport terminus of the channel.

Of the 845 acres, approximately 200 acres are developed at the present time. The major operations area at the airport is 5,000 feet in length and varies in width from 1,800 feet to 2,500 feet. In addition, the long 7,020-foot runway at the southern border of the field, which was used by all the trans-Pacific fliers, is available for heavily laden transports.

Experimenting with Pavement Materials

Paved runways are not contemplated at present, the surface soil of the airport being exceptionally free from dust, although untreated. Experiments are being made in certain areas of limited size, however, with macadam, mulsified asphalt, crushed rock and oil, but no definite conclusions or preferences have been established. The flying field is an all-way proposition, and the airport ful-

THE OAKLAND, CALIF., MUNICIPAL AIRPORT AS IT WILL APPEAR FROM THE AIR

This view shows the major flying area. The 7,020-foot runway shown at the left heads into the prevailing westerly winds. Safe operation of all aircraft is fostered by the lack of surface obstruction. All the work shown here is now completed except construction of the channel dock. The white fence marks the western boundary of the airport

fills the Department of Commerce requirements for an A1A rating.

During its early history, the Oakland municipal airport was the take-off point for the transoceanic flights of the Army, Smith and Bronte and the Dole fliers. Following these flights, the intensive development of the field began. The operations area was first drained at an initial cost of $55,000. Recently an additional $13,000 was spent in extending the drainage system, which consists of tile laterals, spaced 60 feet apart, which empty into two main drains. So effective has been this drainage that at no time has the field been out of use because of wet weather. The grading and rolling of the operations area cost approximately $20,000.

Extensive Lighting Equipment

The lighting equipment was installed after consultation with Department of Commerce attachés, and cost $30,000. It consists of the following facilities:

One 24-inch roating beacon of 8,000,000 candlepower intensity, installed on top of hangar No. 1 with an elevation of 4° above the horizon. It rotates six times per minute.

A boundary light chain of 34 clear 50-watt lamps on a multiple circuit. These are set on concrete standards surrounding the operations area.

Six green, 100-watt approach lights, locaed in the boundary light circuit, two in the center of the east, south and west boundaries.

A 30,000,000-candlepower arc type airport light and five 1,500-watt airport landing lights, which make up the landing floodlight equipment.

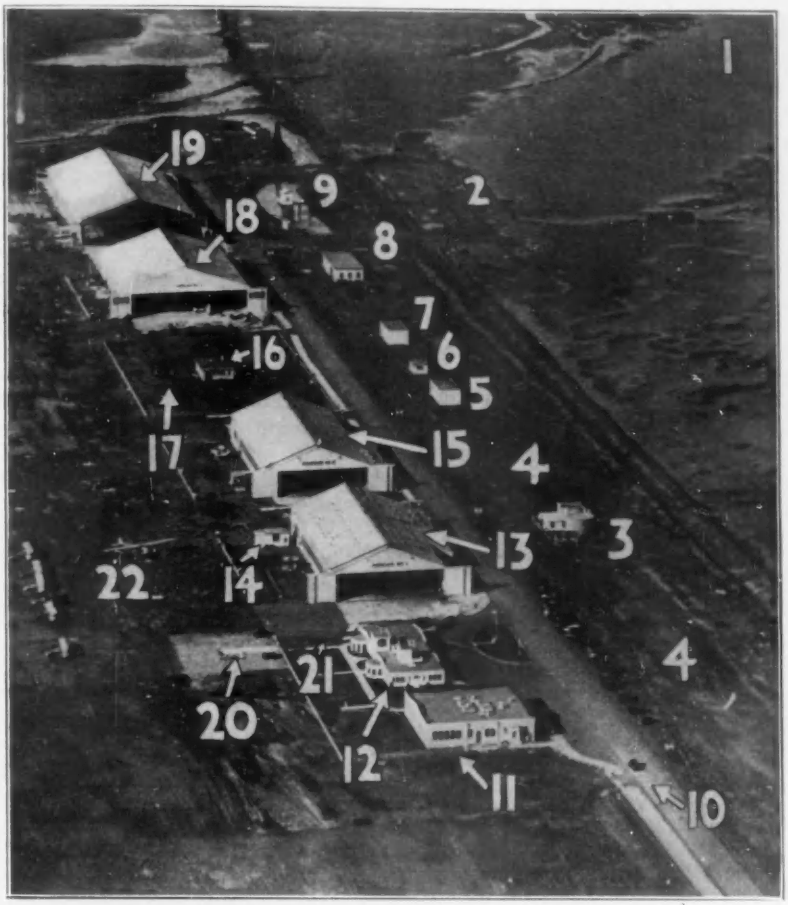
An 18-inch ceiling projector, mounted on the roof of hangar No. 2.

Floodlighting of the buildings is effected by two 1,000-watt 180° lights, two 1,000-watt 90° lights and four 500-watt regular flood lights.

In addition, there are five obstruction lights along the east airport boundary and elevated roadbed; 11 obstruction lights on the buildings, and complete illumination of the building roofs by auxiliary reflectors.

All the hangars at the Oakland municipal airport are of fireproof construction and each is furnished with a 20-foot lean-to the full length of each structure, providing space for shops and offies. Hangars Nos. 1 and 2 measures 90 feet by 200 feet and cost $45,000 each. Hangar No. 3, which is 120 feet by 200 feet, was built at an approximate cost of $70,000, and hangar No. 4, 120 feet by 300 feet, rated as the largest non-military hangar in America, cost $90,000. These hangars have a total storage space of 96,000 square feet.

Boeing Air Transport and Pacific Air Transport, carriers of the transcontinental and coastal air mail respectively, occupy all of hangar No. 2 and half of hangar No. 1. The Western Air Express, operating between Oakland and Los Angeles, occupies the eastern half of hangar No. 1. Hangars Nos. 3 and 4 house the planes owned by the score of commercial operators who furnish ships for cross-country flights and taxiplane service from this field.



AN AERIAL CLOSE-UP OF THE OAKLAND MUNICIPAL AIRPORT BUILDINGS

1. The airport channel. 2. Site where airport channel dock is now under construction. 3. Pumping-plant and water-tank. 4. Parking area. 5. Women's comfort station. 6. Pilots' and operators' headquarters. 7. Men's comfort station. 8. Storehouse. 9. Drainage pump and pumphouse. 10. Macadam airport roadway, concrete sidewalks, curbs and gutter. 11. The airport restaurant. 12. The Administration Building, with towers for observing landing and take-off of planes and for making upper-air observations. 13. Hangar No. 1. 14. Housing for the 30,000,000 candlepower arc-type landing light. 15. Hanger No. 2. 16. Concession stand. 17. Central observation plaza, which is reserved for construction of a terminal building. 18. Hangar No. 3. 19. Hangar No. 4. 20. Passenger loading area. 21. Telescoping canopy which stretches from the waiting-room door to the plane loading area. 22. Tri-motored transport plane taxiing into position on the loading area

Modern Administration Building

The Administration Building, a single-story frame structure, is located just east of hangar No. 1. It is 122 feet long and 42 feet wide. Two towers on the roof of this building are used by the airport superintendent for checking the arrival and departure of planes and by Weather Bureau upper air observers. In this building also are located public telephones and a waiting-room for passengers. This waiting-room affords the passenger full view of the field and is adjacent to the loading area. When the passenger leaves this room to board his plane, he walks beneath a telescoping canopy, which is run out to the door of the transport. This canopy protects him from inclement weather, blasts from the propeller and also keeps him away from the spinning blades.

Approximately half of the Administration Building is used by the United States Weather Bureau and Guggenheim Foundation attachés, who are on duty 24 hours a day at the airport. Complete weather information covering all airways is available to all pilots. A network of stations has been established along the various airways, and the reports from the observers are received and interpreted for fliers at the Oakland bureau.

Adjacent to the Administration Building is the $30,000 Airport Restaurant, operated by the Interstate Company. Coffee shop, dining-room and banquet room service is rendered here. The restaurant can accommodate 185 persons at one sitting. Diners have full view of the flying field activities from their

tables. The Interstate Company, a national organization, also operates the concession stand between hangars Nos. 2 and 3, where confectionery, soft drinks and light lunches are sold.

Two comfort stations near the center of the hangar group were built at a cost of $3,700 each. Construction costs of the airport macadam roadway, sidewalks, and gutters totaled $25,000. The airport channel, 16 feet deep and varying in width from 160 feet to 300 feet, was constructed at an approximate cost of $100,000. The spoil from this dredging was used in extending the airport operations area. This channel provides for speed-boat connections between the airport and other San Francisco Bay cities and also serves the several thousand acres of industrial land next to the airport. The channel dock near the hangars cost $25,000. This dock is 11.2 miles from the San Francisco ferry post office. As all of the air mail for the San Francisco Bay region is received at and dispatched from the Oakland municipal airport, the importance of this waterway is self-evident.

For the protection of airport visitors and to aid in the maintenance of air transport schedules, a system of fenced walkways and observation plazas has been installed at the airport. These areas give the thousands of visitors full view of the flying activities and at the same time prevent them from interfering with the transport operations.

At the present time, the city of Oakland is constructing Hegenberger Road, a new speedway devoid of cross-streets, which will reduce the distance between the center of the city and the airport by 2½ miles. By existing routes, the airport is now 8½ miles from the Oakland post office, and it has its own branch post office.

Passenger Terminal Building Anticipated

As an example of the commissioners' preparedness policy, the central observation plaza between hangars Nos. 2 and 3 has been left unobstructed for the eventual erection there of a passenger terminal building. Definite plans for this structure have not been perfected, but it will serve as a union depot for the various air lines now operating from the airport.

An aircraft proving ground has been established at the airport, through the efforts of the Oakland chapter of the National Aeronautic Association. The city will purchase instruments and survey standard courses in the airport area, so that pilots and manufacturers can test their ships.

A Budgeted City Plan Should Reduce Taxes

UNDER the above title a comprehensive address on the advantages of a long-term budget for capital expenditures of cities was delivered before the American Academy of Political and Social Science, at Philadelphia on February 15, by George B. Ford, Vice-President of the Technical Advisory Corporation, of New York. He stated that as much as two-thirds of the tax dollar is frequently spent on permanent improvements, and that while the annual operations budget has been a great advance, it is time to budget capital expenditures as well. This should take the form of a scientifically prepared program extending over a period of years, as has been done by a number of progressive cities. Mr. Ford gives the following as some of the reasons why a long-term budgeted city plan program should be an excellent investment for any city:

1. The budgeted city plan should give the taxpayer as well as the official a much better opportunity to see just what he is getting for his taxes and assessments. He can also see far better what the future holds in store as to ultimate cost of improvements—all of which makes it possible to avoid unexpected increases in the tax levy.

2. A budgeted plan makes it possible to determine for many years ahead what permanent improvements can be handled on the pay-as-you-go principle and what will have to be handled by bond issues.

3. A budgeted plan would show much more clearly how far it is desirable to pay for public improvements by special or local assessments.

4. The budgeted plan shows how to avoid the waste that comes with undertaking improvements before they are actually necessary, or before they could possibly given an increased value to neighboring property.

5. On the other hand, the budgeted plan shows how to avoid deferring vitally needed improvements, as is often done just to keep taxes down.

6. The budgeted plan can readily provide an adjustable margin for speeding up needed public improvements so as to provide employment for those out of work in times of stress.

7. The budgeted plan shows how to avoid the extravagances of big bond issues which may be voted in the whipped-up enthusiasm of the moment.

8. The budgeted plan indicates possibilities of picking up, whenever they are particularly cheap, properties which will be eventually needed for public improvements.

9. The budgeted plan helps in extending improvements to undeveloped areas without undue cost to the taxpayer.

10. The budgeted plan shows clearly where it may be desirable to shift improvement costs to the county, or state, or where annexation may be the best policy.

11. The budgeted plan permits a coordination of the city plan with the county and school programs, all with a corresponding avoidance of overlapping and an adjustment of the tax rates.

12. The budgeted plan helps the equitable distribution of improvements among rival wards, or it shows clearly just why the demands of a given ward may be impracticable or unfair.

13. The budgeted plan should include most of the reasonable demands of citizens. If the demands are not reasonable, the plan would show why they are not and how the plan would solve the problem more satisfactorily. It thus helps councilmen to resist the importunate demands of their constituents.

14. The budgeted plan should give the politician many excellent talking points.

15. The budgeted plan constantly before the public should make it difficult for a councilman, even with the best of intentions, to suddenly interject a pet project into the improvement program.

16. The budgeted plan is bound to stabilize the economic situation. It should help the leasing of property, as tax and assessment demands and the benefit from improvements can be more definitely anticipated.

17. The budgeted plan should improve the city's credit and thus lower interest rates, debt service and taxes.

18. The budgeted plan is nothing more or less than what is done currently by most successful private corporations, telephone companies and other public service corporations. If it is considered essential there, there is no reason why it should not be equally effective in city financing.

19. Perhaps most important of all, a budgeted plan begets public confidence in the administration and inspires an honest civic pride.

The President of the New York State Conference of Mayors, Hon. Fred C. McLaughlin, of White Plains, said recently: "The solvency, credit and prosperity of a city depends on wisdom in capital expenditure and the budgeted city plan. This, in my mind, is the keynote of success."

Nor is the problem solved merely with the adoption of a budgeted city plan. The plan and budgeted program must be permanent. A planning procedure must be established, never to be departed from in the future. This means: (1) a permanent bureau or office of city planning collaborating with the public works or the engineering department; (2) a special legal service for city planning to handle land acquisition, setbacks, mapping, etc.; and (3) an advisory board to sit periodically with city officials to determine general policies.

The general adoption of a long-term budgeted city plan should prove to be the most effective thing cities and towns can do to relieve the burden on the taxpayer.

Taxation for Community Advertising

A Survey of Present Practice in the Various States

By W. T. HICKS

A SURVEY conducted by the writer under the auspices of the General Extension Division and the College of Commerce and Journalism of the University of Florida has brought out the fact that in only a few states is legal provision made for spending tax money for community advertising and promotion, but that frequently such expenditures are made without specific legal authority. The extent to which the idea of carrying on community advertising with tax money has spread over the United States is shown in the following summary of answers from the various states to the question, "Has tax money been spent for community advertising in your state?"

Yes	*No*
California	Alabama
Colorado	Arizona
Delaware	Arkansas
Florida	Illinois
Georgia	Indiana
Idaho	Iowa
Maine	Kansas
Maryland	Kentucky
Massachusetts	Louisiana
Michigan	Nebraska
Minnesota	Nevada
Missouri	New Mexico
Mississippi	North Dakota
New Hampshire	Ohio
New York	Oklahoma
New Jersey	Rhode Island
North Carolina	South Carolina
Oregon	Tennessee
Pennsylvania	Texas
South Dakota	Utah
Vermont	Washington
Virginia	*Seldom*
West Virginia	Connecticut
Wisconsin	*For Fairs Only*
Wyoming	Montana

A letter from Arizona says that efforts to create an appropriation for state advertising have been made, but so far without success. Colorado has a few counties that spend a small amount for advertising.

The 1927 session of the Legislature of Idaho passed an act recorded as Chapter 242, page 378, 1927 Session Laws, known as the publicity act, which reads, "An act, creating a State Board of Publicity, defining its powers and duties and providing for the membership thereof; making an appropriation and declaring an emergency."

Massachusetts has only three or four municipalities that spend tax money for publicity, and each municipality is limited to an expenditure of $5,000 on condition that an equal amount is contributed by the public, the whole amount to be spent under the direction of the city.

Act 88 of 1913, state of Michigan, provided that counties might levy a tax not to exceed $2,000 for advertising the agricultural advantages of the county each year. This law was amended by Act 305 of 1917 which provides that the tax shall not exceed 5 cents on each $1,000 of taxable property in the county. The state in addition has authority to pay to each of three improvement associations an amount not to exceed $5,000 a year.

Localities Will Continue to Advertise Their Advantages

There is still a great difference of opinion as to the relative merits and demerits of community advertising. Community advertising, like practically all other forms of advertising, does not lend itself readily to a scientific investigation of the results achieved. An insufficient amount of work has been done to definitely determine its effect upon the United States as a whole. Indications, however, lead one to believe that localities will continue to advertise their advantages. Since this is the case, the question naturally arises as to whether the money therefor will be raised by private subscriptions or by taxation. While arguments have been advanced in favor of each method, the method of taxation has witnessed a very rapid growth throughout the United States in the past six or eight years.

The Immigration Department of Minnesota carried on advertising for a number of years, but this department was abolished in 1927. Both the state and counties of Montana support fairs with tax money, and the state has had a number of exhibits at national and international shows.

In 1926 Mississippi passed an act "to authorize and empower the boards of supervisors and boards of aldermen to provide for advertising the resources and possibilities of the various communities, counties, and sections of Mississippi." This allows any county or city in the state to contribute to any advertising fund of any organization to an extent not exceeding one mill of the assessed valuation of the county or city.

The state of New Hampshire appropriated $35,000 for each of the fiscal years 1927-28 and 1928-29 to be spent through a Publicity Bureau.

Oregon passed a law in 1927 authorizing cities to spend as much as $5,000 annually for advertising and publicity, but it is necessary for each city to vote upon the tax before it can be adopted by the particular city.

Pennsylvania has given no authority to municipalities to spend tax money for advertising, but a few cases are on record of small amounts having been spent.

The Secretary of State of Vermont has an appropriation of $15,000 a year for this purpose. In 1926 the Virginia Legislature appropriated $50,000 a year for two years for advertising the state.

The Division of Immigration of the Department of Agriculture of Wisconsin has been supported by appropriations for about twenty years, one of the main objects of the division being to advertise the state. Counties in Wisconsin have also spent small amounts of money for this purpose, but in the latter part of 1927 the legality of such expenditures was questioned and they were declared illegal.

The Wyoming Legislature of 1927, in Chapter 129, Session Laws of 1927, authorized the levy of 1/20th of a mill which is to be devoted to the maintenance of a Department of Commerce and Industry, the duties of the Department being to advertise the resources and advantages of the state.

The Canadian Goverment appropriated $500,000 in 1923 for an advertising campaign that was practically world-wide in scope, with the object of attracting new citizens to the Dominion. The campaign in the United States included over 120 agricultural mediums. In addition to the Canadian Government's campaign, certain amounts of tax money are spent by various provinces. A letter from the Director of Publicity of the Department of Immigration and Colonization of Ottawa says: "This department conducts a relatively limited advertising campaign, supported by other means of publicity, in the United States and Great Britain to acquaint the public with the opportunities which Canada affords to new settlers. . . . The expenditure, considering the magnitude of the task, is relatively very limited, but results are found in a steadily growing number of good settlers to Canada both from the United States and from the British Isles."

California and Florida are the two principal states which pursue the policy of spending tax money for community advertising and promotion. In the fiscal year 1925-26, which is the latest year for which complete figures can be obtained, the counties of California raised by taxation $1,264,065.58 for publicity purposes, while the cities, exclusive of Los Angeles, which is combined with Los Angeles County, raised similarly about $240,000. In that year 46 counties in California used the publicity tax, while only 12 did not. The amounts raised by a county varied greatly. Trinity County raised only $679.18, while San Francisco County raised $146,764.60 and Los Angeles County raised $732,269.44. The Stockton (Calif.) Chamber of Commerce advises that "all counties and cities in the state may make a tax levy for colonization purposes. In this county the fund secured from such levy amounts to $26,000 a year, and is known as the Colonization Fund. The Board of Supervisors makes an annual appropriation to all of the chambers of commerce in this county with the understanding that such money will be expended by the chamber of commerce receiving it, to stimulate colonization, that idle acreage may be put under cultivation."

The year 1913 witnessed the beginning of the advertising tax in Florida, for in that year a bill was passed by the Legislature authorizing Lake County to levy a tax for publicity purposes. Lake County did not take advantage of this until 1919. St. Petersburg was one of the first cities in Florida that taxed its people for publicity, but it was 1914 before a tax was levied. In that year $4,500 was turned over to the St. Petersburg Chamber of Commerce for advertising the city and entertainment of winter visitors. Advertising was stopped during the World War, but in 1921 the city of St. Petersburg began levying the present limit of 2½ mills for publicity. West Palm Beach adopted the tax in 1917, and in 1919 Tampa and Hillsborough County began taxing for publicity purposes.

The number of cities and counties spending tax money for publicity in Florida has increased to such an extent that at the present time a total of 72 cities and 38 counties follow this policy. The amounts spent by the communities will vary, of course, the cities ranging all the way from a half-million dollars with Miami to as low as $100, while the counties range all the way from $55,000 on down to $50. A total of over $2,000,000 was spent during each of the fiscal years 1926-27 and 1927-28 by the cities and counties together. In addition, the 1925 Legislature of Florida appropriated $50,000 a year for two years to advertise the state, while the 1927 Legislature appropriated $75,000 for each of the fiscal years 1927-28 and 1928-29. The money appropriated by the Legislature has been handled by the State Department of Agriculture, the primary purpose being to develop the resources of the state.

Effect of Traffic Signals on Traffic Flow and Accidents in Essex County, New Jersey

By HAWLEY S. SIMPSON

Traffic Engineer of Essex County, Newark, N. J.

THE Boards of Chosen Freeholders of New Jersey counties were given jurisdiction in 1927 over the erection of traffic signals, signs and other devices for the control and regulation of traffic on roads under their control. With the exception of Essex, all counties have exercised merely a veto power, either approving or rejecting the request of municipalities to erect such types of signal systems as each deemed best fitted for their own needs. Realizing that this policy would lead only to confusion in a county such as Essex, comprising 22 separate and distinct municipalities, the Board elected to take over, *in toto*, the installation of such devices, organizing a traffic department in July, 1927, under the direction of a traffic engineer. This plan, while somewhat radical, seemed acceptable to the municipalities, the municipal officials realizing that a uniform plan of control would tend to promote safety and vehicular efficiency.

The arrangement by which the erection of signals was undertaken was as follows:

1. At an intersection of a county and a municipal road, the cost of signal installation is borne equally by the county and the municipality.

2. At an intersection of two county roads, the county bears the entire cost of signal installation.

3. In either case, the county installs and maintains the signals and pays the operating costs, except that when manual control is deemed necessary, the municipality furnishes a traffic officer to operate the signals.

Under this plan signals have been erected at thirty-six intersections shown on the accompanying map, and plans have been completed for the installation of signals at sixteen additional intersections, as shown thereon, of which eight are under the control of the Essex County Park Commission. In all cases the installations have been of the four-corner, far-side, post-mounted type, using at least six one-way signals on four posts at every important intersection.

Progressive Operation by Synchronous Motor Timers

The intersections at which coordinated signals are indicated on the map are timed according to a predetermined schedule of progression. Synchronous motor timers are used in all cases rather than timers requiring interconnection by cable, although three proposed signals on Park Avenue will be coordinated by an impulse type of control using interconnecting cable. The synchronous motors have been uniformly satisfactory, and have kept "in step" except for current interruptions. Each signal is timed and its relation to the others of the group checked at least every two days, and oftener if service is interrupted. The progressive operation has been decidedly satisfactory, especially in the ¾-mile area on Bloomfield Avenue in the business section of Montclair. This street has but a 50-foot pavement with streetcar lines, bus lines, concrete safety zones and parking on both sides, and carries about 10,000 vehicles in both directions between 8 A. M. and 6 P. M. at a higher speed than was possible under individual officer control at the five intersections. The signals are timed for a speed of 20 m.p.h., and the average of all vehicles is about 15 m.p.h., as against an average of below 10 m.p.h. under the former control, with rush-hour speeds as low as 5 m.p.h. This is not solely the result of signaling, but partially because of the fact that motor vehicles are now allowed to pass to both right and left of safety zones, which was not thought practical until the intersections were signalized.

The signals indicated as isolated are in some cases automatic and in others manual. The manual signals have been installed at intersections where the necessity for signal operation occurs only during rush hours, to break a heavy stream of vehicles on the major street and allow the safe crossing of a rela-

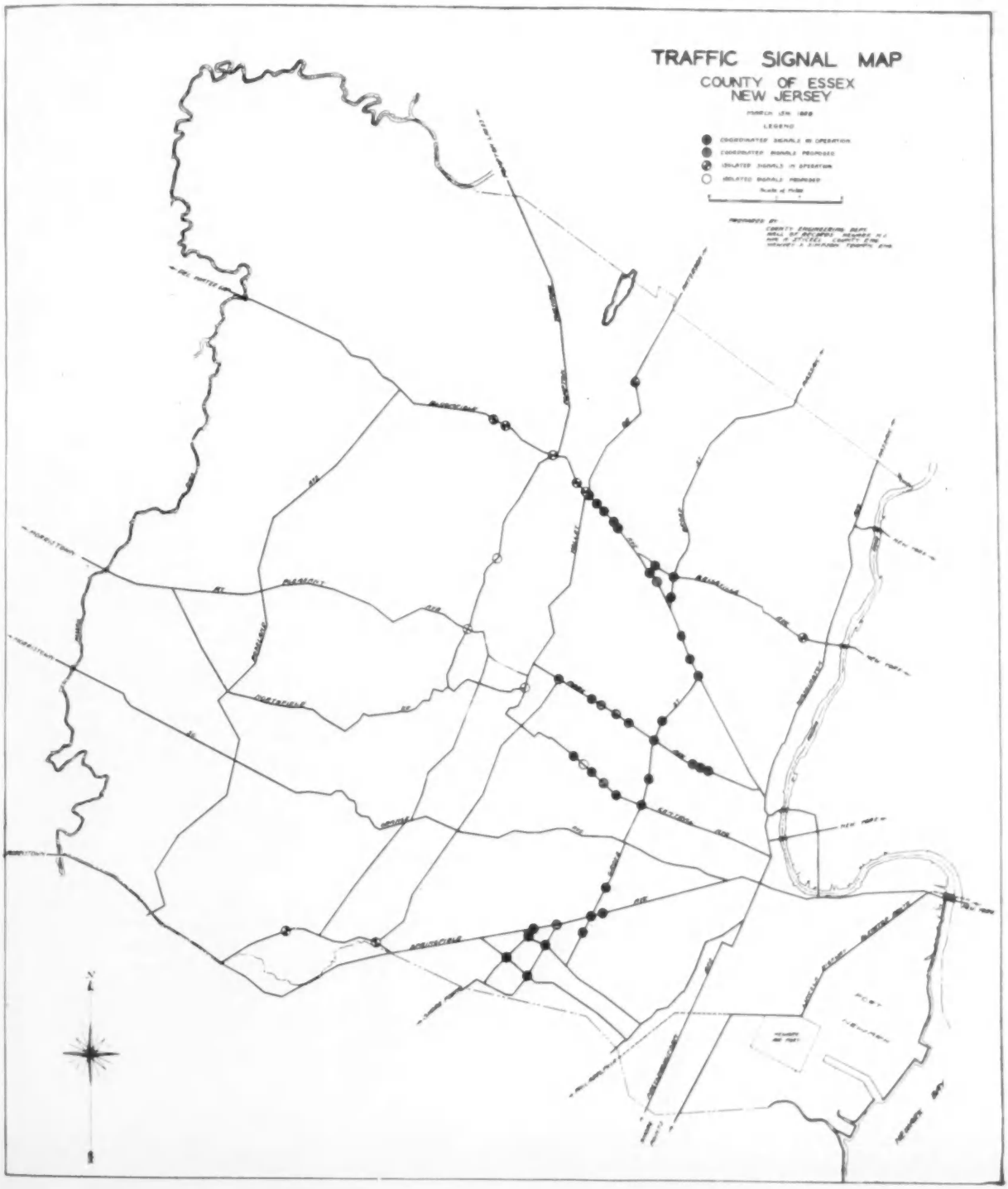
tively small number of vehicles and pedestrians. The operation of automatic signals needlessly when traffic volume is relatively light is one of the worst and most prevalent abuses of automatic signals. The elimination of the automatic feature at certain intersections effectively assures that the signals will not be operated when traffic conditions do not warrant.

An analysis of the accident records of the intersections at which traffic signals were placed in operation in 1928 has been made from reports furnished by the Police Departments.

The accidents for each intersection were tabulated, both prior to and succeeding the installation of the signals, and fatal accidents were eliminated from consideration because of their relative infrequency and high loss value. The injured accidents were converted to equivalent non-injured accidents, by multiplying each injured accident by the factor 4½. This relation between the economic loss in injured and non-injured accidents is based upon estimates made by the First National Conference on Street and Highway Safety, from the report of which the statements below are quoted:*

"The economic loss due to these . . . [street] accidents can probably never be known. Several estimates have been made. The most conservative is based upon . . . an average of $175 for each personal injury," to which must

* Report of the Committee on Statistics, page 18, dated November 3, 1924.



be added "an average actual property damage of $50 due to all accidents involving either personal injury or property damage."

The resultant figures are then:

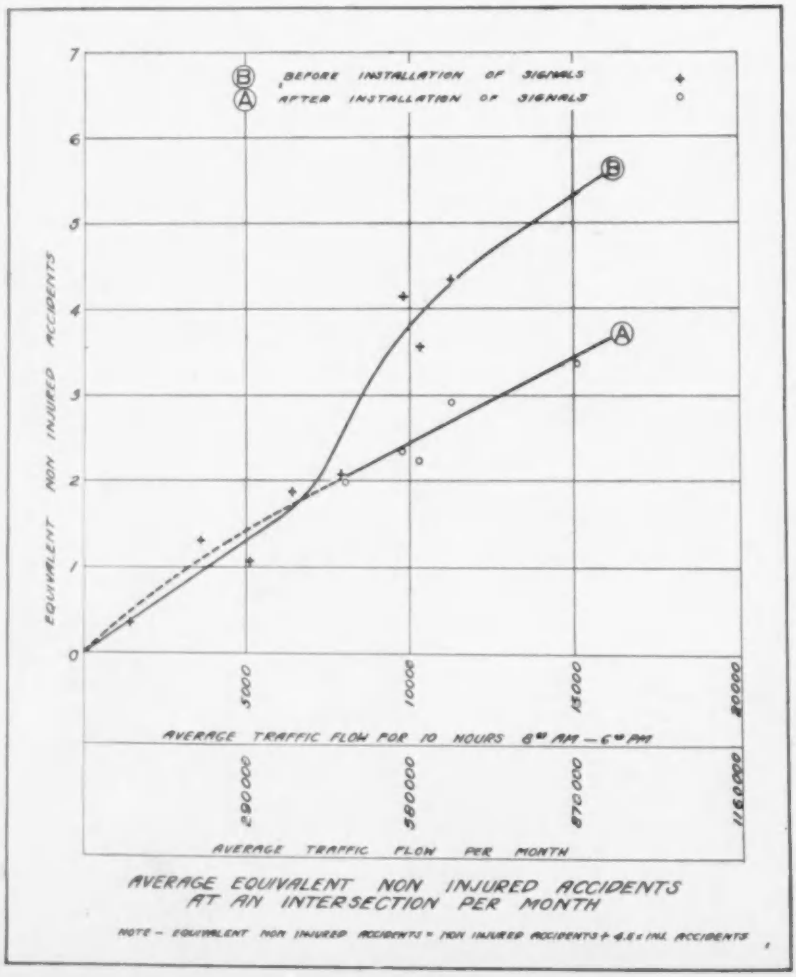
Average loss in personal injury accident	$225
Average loss in property damage accident	50
Ratio of loss in personal injury accident to property damage accident	4½ to 1

The average number of equivalent non-injured accidents per month, both before and after signal installation was computed and these averages weighted on the basis of the average hazard throughout the county during the same periods. The intersections were next placed in five groups, signals on the same streets or in the same areas being grouped together. This was done in order to obtain a greater experience both before and after installation than would be possible by computing the hazard for each intersection individually. The average number of accidents per intersection per month for each group was computed and plotted on the Y-axis against the average number of vehicles per day (and per month) passing through the average intersection of each group. The number of vehicles per month was determined from studies made by this department which indicate that the average number of vehicles through an intersection per month is equal to about 58 times the traffic on a week day from 8 A. M. to 6 P. M.

TABLE I.—AVERAGE ACCIDENTS PER MONTH BEFORE AND AFTER TRAFFIC SIGNAL ERECTION

Location of Intersections	No. of Intersections	Average Traffic per Intersection 8 A.M.-6 P.M.	Average Traffic per Intersection Per Month	*Average Equivalent Non-Injured Accidents per Month Before Signals	After Signals
Central Avenue	4	15,076	874,408	5.37	3.37
Grove Street	5	11,271	653,718	4.32	2.90
Bloomfield Avenue	9	10,321	598,618	3.54	2.22
Town of Irvington	9	9,779	567,182	4.14	2.35
Miscellaneous	5	7,904	458,432	1.99	1.98
Miscellaneous	5	6,469	375,202	1.85	†
Miscellaneous	7	5,167	299,686	1.05	†
Miscellaneous	5	3,607	209,206	1.30	†
Miscellaneous	3	1,454	84,332	.36	†

*Average Equivalent Non-Injured Accidents per Month=Non-Injured Accidents +4.5×Injured Accidents. †No signals installed.


BEFORE INSTALLATION OF SIGNALS
AFTER INSTALLATION OF SIGNALS
EQUIVALENT NON INJURED ACCIDENTS
AVERAGE TRAFFIC FLOW FOR 10 HOURS 8AM — 6PM
AVERAGE TRAFFIC FLOW PER MONTH
AVERAGE EQUIVALENT NON INJURED ACCIDENTS AT AN INTERSECTION PER MONTH
NOTE - EQUIVALENT NON INJURED ACCIDENTS = NON INJURED ACCIDENTS + 4.5 x INJ. ACCIDENTS

In addition, similar statistics were computed for twenty intersections in four traffic groups at which no traffic signals are in operation. At all of these intersections the crossing traffic was a considerable proportion of the total traffic, and in this respect they were somewhat comparable to the other intersections studied.

The statistics thus compiled are shown in Table I, and in graph form below. The estimated portion of curve A is drawn in with no basis of fact, and is shown merely as an indication of probable accident losses when traffic volume is below 8,000 vehicles in 10 hours. For such traffic volumes it can be easily proved that signals unnecessarily obstruct the traffic flow,* and if they do not prevent accidents, as it appears, then their use is most questionable under those conditions.

From these statistics it would appear that for traffic through an intersection exceeding 10,000 vehicles in 10 hours, the accident hazard can be decreased approximately 35 per cent by the installation of automatic electric traffic signals with adequate visibility, while below 10,000 vehicles per day, the saving decrease rapidly, and below about 7,000 vehicles per day, signals would be of doubtful benefit in preventing accidents.

The accident hazard measured in accidents per 100,000 vehicles passing through an intersection appears to be quite constant at about 0.4 accidents per 100,000 cars after signals are used, while before the installation of signals the figures vary so as to be hardly analyzable. The statistics used in Table I are analyzed in terms of accident hazard in Table II.

TABLE II.—AVERAGE ACCIDENT HAZARD PER INTERSECTION BEFORE AND AFTER TRAFFIC SIGNAL ERECTION

Vehicles per Month	Average Equivalent Non-Injured Accidents per 100,000 Vehicles Before Signals	After Signals
874,408	0.61	0.39
653,718	0.66	0.44
598,618	0.59	0.37
567,182	0.73	0.41
458,432	0.43	0.43
375,202	0.49	+
299,686	0.35	+
209,206	0.45	+
84,332	0.43	+

No attempt is made to defend the value of this analysis, as it is readily admitted that the statistics are too sketchy to be conclusive, yet it is felt that the statistics must be indicative of the results that would follow traffic signal installations under similar conditions, and, moreover, that any addition to the at present too little accurate information regarding the causes of street accidents may be of some value.

* 1928 Transactions of the National Safety Council, pages 143-156.

FORWARD STEPS

Reported by

Municipal Officials, Chamber of Commerce Executives, and Others

Outstanding Municipal Utility Enterprise Erects Modern Headquarters

JACKSONVILLE, FLA.—The Public Utilities Department of this city, which operates two major utilities—water and electricity—is now housed in a separate city building recently erected at the foot of Laura Street, on the waterfront.

This building is a solid brick, steel and reinforced concrete structure, absolutely fireproof. It has been built so as to accommodate a substation, or distribution point, for our downtown underground electric service, and will ultimately have a capacity of about 30,000 kw. It comprises four stories and a basement and was erected at a cost of $75,000 for the lot and $114,000 for the building. In the sidewalk, directly in front of the building, are manholes that go into a basement beneath the sidewalk, out of which 54 4-inch duct lines extend from the northern end of the building to the intersection of Laura and Bay Streets. Of course there are a good many more ducts than are required at the present time, but they will be put into use when the demand for service increases.

The first floor is occupied by transformers, reactors, etc.; the second floor contains switchboard and street-lighting equipment, also a control room, which will be used to control the entire electric system at a later date. The two upper floors are used as offices by the superintendents of electric plants, electric distribution, water plants and water distribution, and house all the officers and employees connected with the executive force of the department.

At the present time, this station is being served by an underground connection through our Orange Street substation, connected directly with the main generating station.

The ultimate plans are to put in four additional 13,200-volt lines from the central station, along the river-front, to this station. These new lines will, of course, be underground and will come through the commercial and industrial section of our river-front property—approximately 4½ miles.

The building is thoroughly modern in every particular, being equipped with automatic elevators, steam heat, electric refrigeration for the drinking water, etc.

Jacksonville is the largest city in the United States whose citizens are supplied with electric service exclusively by a municipal plant; and recent improvements* have practically doubled its capacity, making it 68,500 kva.

While there are several municipal hydro-electric plants of greater capacity, Jacksonville now has the largest municipal steam plant doing a general light and power business. Since we have been operating under the new conditions of 450-lb. pressure and 200° superheat, as compared with 200-lb. pressure and 100° superheat in the old plant, we have increased our kilowatt-hour output ber barrel of oil about 50 per cent, averaging 350 kwh. per barrel for the past two months as against an average of 298 kwh. in 1928.

MUNICIPAL UTILITIES BUILDING ERECTED ON WATER-FRONT AT JACKSONVILLE, FLA.

FRANK H. OWEN,
Commissioner of Public Utilities.

California City Sets Fire Prevention Record

RICHMOND, CALIF.—Considerable interest is being evinced in the fire prevention methods employed in Richmond, due to the special recognition accorded this city recently for its achievements in that field.

Its initial honor was gained early in 1928 when Richmond appeared at the top of the list of honor cities in the National Fire Waste contest conducted by the United States Chamber of Commerce. This was followed last October by the city's winning permanently the Thomas H. Ince trophy for excellence in fire prevention work among cities of less than 50,000. As a final award, Richmond received the Louis B. Mayer International Trophy for cities between 20,000 and 100,000, the announcement being made at the annual convention of the International Association of Fire Chiefs at Philadelphia last fall.

This industrial city of approximately 31,000 population is the home of 49 manufacturing plants and of much frame construction. Its fire prevention methods probably are little different from those of many other cities, but are followed thoroughly and consistently. The Fire Department proceeds on the belief that effective fire prevention is 90 per cent education, supplemented by constant inspections and supported, of course, by the proper city ordinances.

The public has cooperated faithfully in this city and it has not been necessary to take a single case to the police court in four years to obtain the desired result. Inspections are conducted by Fire Department officers who are scheduled to visit every dwelling at least once each year, and all business houses and industrial plants not less than three times annually.

Talks, demonstrations and discussions are sponsored in the schools, clubs and churches at every opportunity. The press deserves credit also for reporting fires and their causes, as well as other facts and events connected with them and the fire prevention work. The Fire Department has found that if the public is kept thinking fire prevention it will begin to practice it. Those who participate in the work here are not afraid to work and believe in it thoroughly. The Fire Prevention Committee of the Affiliated Service Clubs and the Richmond Chamber of Commerce is active and effective.

Richmond has a modern Fire Department of fifty-three members and seven pieces of apparatus, housed in four station; it was placed on a full paid basis in 1915. It is the policy of the fire officials to fight their fires before they start, through adequate fire prevention measures.

WILLIAM P. COOPER,
Chief, Fire Department.

*See THE AMERICAN CITY for March, 1928, page 86, for description of the work then under construction.

City of Modesto Completes Addition to Library

MODESTO, CALIF.—Recently this city completed an addition to the Public Library as shown by the accompanying photograph.

The Mayor and Council of Modesto have adopted the pay-as-you-go policy and have made many modern improvements in the city without a bond issue being made.

The addition to this building, costing approximately $35,000, was financed in this way. The building is approximately 75 feet by 120 feet in dimensions, having two stories, the lower floor being used for the children's room, students' rooms, small auditorium, storage and transfer room.

The upper floor has the Librarian's office, attendants' quarters, check counters, bookstacks, listing-room and main reading-room, 55 x 75 feet, having a capacity of 100 persons.

Special care was given to ventilation and lighting. No artificial light is required in the daytime. The lighting for night reading is so arranged that no glare or shadows exist.

The entire building is heated by a low-pressure hot-water system.

F. J. ROSSI,
City Engineer.

VIEW OF PUBLIC LIBRARY AT MODESTO, CALIF., SHOWING RECENT ADDITION
City financed this $35,000 improvement project without floating a bond issue and by following a pay-as-you-go policy

Marietta Guides Tourist by Unique Cartoon Maps

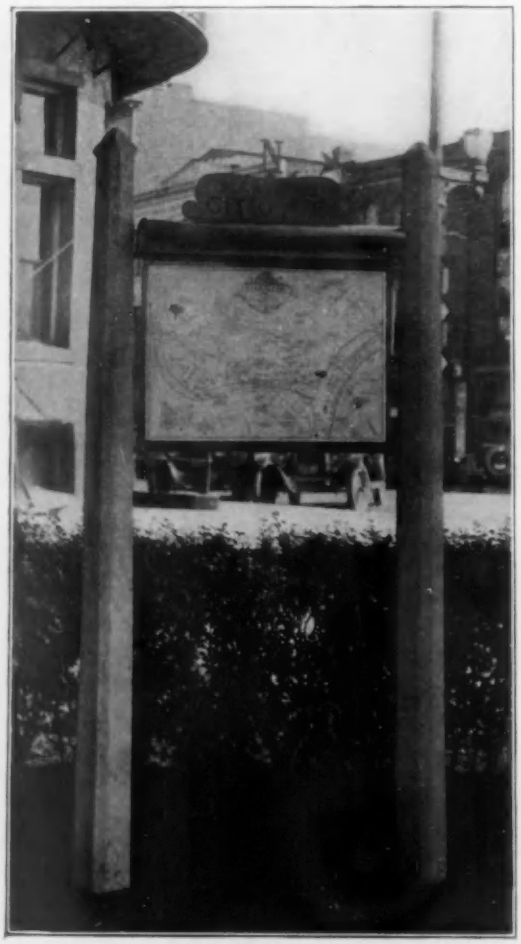
MARIETTA, OHIO.—This city, which has made a number of innovations in prevailing systems of marking streets and points of interest, is now attracting attention by its plan of cartoon maps, known as "Citiguides."

These maps, printed in black and white on metal and attractively mounted between concrete posts, are located at strategic points about the city. Points of interest are designated by appropriate cartoons, and the tourist consulting the maps finds it easy to comprehend the complete layout of the city. Each citiguide informs the visitor studying it just where he is at the moment, offers him the points of the compass and, by means of canopied lights, is available by night as well as by day.

Supplementing this novel guide service, Marietta provides replicas of the citiguides in the usual printed form and these may be obtained in any of the local stores. A panel on the citiguides advises the observer to ask any member of the Marietta Chamber of Commerce for a copy of these interesting maps, and in less than seven months 37,000 of them have been distributed upon request.

The citiguides have been established to attract as many tourists as possible to Marietta. It is impossible to hand every visitor a printed map, under the distribution system usually in vogue, and too often the average city map is but a bare engineering drawing, devoid of any particular human interest that might encourage the tourist to thoroughly inspect the city. By careful planning, the citiguides have been located at those points where motorists approaching Marietta might become confused and perhaps temporarily lost. During the tourist season, groups of travelers may be seen gathered about these maps at almost any hour.

E. M. HAWES.



ONE OF THE "CITIGUIDES," CARTOON MAPS, AT MARIETTA, OHIO

* See THE AMERICAN CITY for November, 1926, page 679, and September, 1927, page 347.

An Indoor Golf Course as a Public Recreation Facility

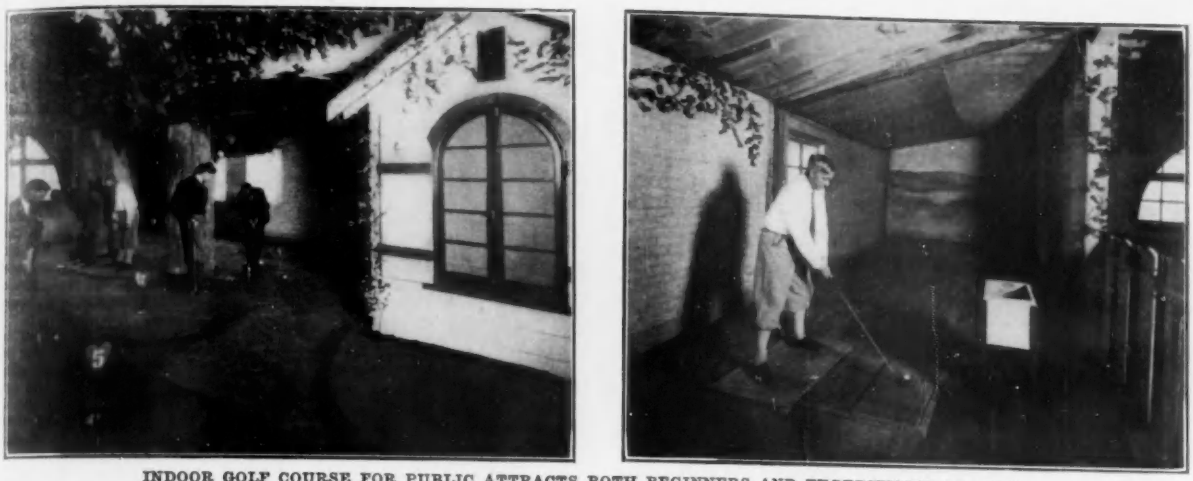
LOS ANGELES, CALIF.—Taking a new step in the promotion of public recreation, the Los Angeles Playground and Recreation Department has established an indoor practice golf course, which is rapidly growing in favor with both beginners and more experienced players. This course occupies the entire second floor of a swimming-pool bathhouse at Griffith Playground, and consists of nine holes. The ball is played on a soft green carpet made to resemble a grassed putting-green. Artificial trees, leaves and vines ornament the course and give it a natural appearance. These have been treated with a chemical substance causing them to retain their natural colors and at the same time remain fire-proof.

Three driving-cages are included in the equipment, and a model club-house provides the final touch. Clubs and balls are available for the use of the public. No charge is made for their loan, or for using any of the course facilities.

The whole recreational layout is under the supervision of a golf professional, who also gives individual lessons for the nominal fee of fifty cents per lesson.

To increase the interest of the public in this course, putting-tournaments are held from time to time. Another method used by the Los Angeles Playground and Recreation Department to further the use of this course is to encourage its use by employed men and women who are desirous of learning the game of golf. A combination of evening golf and a social party is also a novel recreational feature offered the public at the Griffith indoor course.

SAMUEL L. FRIEDMAN,
Department of Playgrounds and Recreation.



INDOOR GOLF COURSE FOR PUBLIC ATTRACTS BOTH BEGINNERS AND EXPERIENCED PLAYERS
Views of the putting greens and one of the driving cages at the Griffith course established by the Playgrounds and Recreation Department at Los Angeles, Calif.

"Discovery Week" Program Introduced at Fort Wayne

FORT WAYNE, IND.—To familiarize residents of Fort Wayne with the growth of their city, the Chamber of Commerce recently sponsored an instructive program under the title of "Discovery Week."

Citizens were urged to "discover" their city once again, and as an aid in realizing that aim, the week was devoted to a general review of outstanding civic developments of past and present periods. Among the mediums employed to stimulate interest were the newspapers, the radio, the luncheon clubs and the schools.

The outstanding feature of the week's program was the story of Fort Wayne's progress, told at numerous clubs and civic gatherings by the Rev. Cliff Titus of Joplin, Mo., attired as General Anthony Wayne. It was felt by the committee in charge that probably some outsider could paint a more impressive picture of local growth than a lifelong resident. Programs were held each day at the schools, service club luncheons, and various industrial and mercantile establishments. Brief radio talks were given each noon and evening to reach many who could not attend the daily gatherings.

As a climax to the observance, an enthusiastic banquet was conducted at the Chamber of Commerce auditorium. Three tableaux depicting important events in Fort Wayne's history supplemented the usual addresses.

"Discovery Week" was a decided success and attracted state-wide attention. An effort is being made to extend its benefits by keeping local citizens informed about, and interested in, all civic projects in the future. Details of the program, which was conceived by the Meetings and Goodwill Committee of the Chamber of Commerce, were handled by the Allen-Wayne Club, the Chamber's "live-wire" organization.

Another movement stimulating public interest in worth-while civic endeavors is being fostered by the Fine Arts Committee of the Chamber of Commerce. Each month is set aside for programs emphasizing some of the fine arts. Thus, one month is devoted to the plastic arts, one to literature, one to architecture, music, photography, etc. Prize contests, addresses by authorities on the various subjects under consideration, and special service and civic club programs, are leading features of these monthly observances.

J. B. WILES,
Manager, Chamber of Commerce.

A Picnic Range with Fire-box Coils for Heating Water

PASADENA, CALIF.—People who picnic and appreciate having quantities of hot water for hand and dish washing heartily approve of the system in use at the picnic grounds in Chevy Chase, near Glendale. A huge picnic range has been made of rock cemented solidly together, the flat top forming an admirable cooking surface, while the skillfully constructed "chimney" carries all smoke away, high above head level. Best of all, the women folk say, is the network of heating coils installed in the fire-box; these, cleverly connected with a generous-sized tank, mean that hours after the fire is out quantities of hot water can be drawn from the faucet that is placed at a convenient height at the base of the tank. The construction is simple, and the cost so slight that this practical aid may be easily installed elsewhere than in this highly restricted residential community.

CHRISTINE EMERY.

Akron's Smoke Abatement Ordinance

AKRON, OHIO—Because of the increasing number of fires caused by defective chimneys and improperly installed heating equipment, the Akron City Council has just passed an ordinance covering this phase of building and incorporating within it the former smoke abatement ordinance.

The new ordinance creates a Department of Heating and Mechanical Equipment and provides for the further prevention of fire and smoke emission in the city by regulating the construction of chimneys and stacks, and the construction and installation of steam and hot-water boilers and warm-air furnaces and appurtenances thereto. It provides for the appointment of a Smoke Commission and a

HUGE PICNIC RANGE FITTED WITH HEATING COILS AND WATER TANK IS FEATURE OF CALIFORNIA GROUNDS

commission of warm-air heater contractors who will act as a board of examiners and work in conjunction with the Smoke Commission.

The new commission will also act in an advisory capacity, as does the Smoke Commission, to the Chief Inspector of the Department. The former Chief Smoke Inspector will act as chief of the new department and in addition thereto two deputy inspectors are to be appointed.

The ordinance covers the manner in which heating equipment is to be installed, as well as the size. The latter provision will prevent the installation of equipment too small in size to properly heat the building during severe cold spells and will thus prevent overheating and fire hazards from that source.

The construction of chimneys is also covered, and provision for both draft and smoke tests is made, thus assuring a tight chimney and a reduction of fire hazards.

The ordinance provides for both a rough and a final inspection of all equipment.

All furnace manufacturers, installers, and repair men will be obliged to take out a license, said license to be granted only after having been examined as to their qualifications and ability to do the work required. Permits must also be taken out for all jobs, so that the Department will have a check on all work under way. Plans of the building must be furnished to the Department when application for permit is made, so that the inspectors may determine the necessary size of equipment needed.

The ordinance has 41 sections, including sections fixing penalties and a police power and saving clause.

The new Department will be connected with the Building Inspection Department operating under the direction of the Department of Public Safety.

R. C. DEMARY,
Chief Inspector, Heating and Mechanical Equipment.

St. Petersburg Adds Shuffleboard to the Recreational Facilities of Its City Parks

ST. PETERSBURG, FLA.—With the recent introduction of shuffleboard in our local parks, a form of recreation new to city life made its advent. The game won instant popularity. Surprising as it may seem to the uninitiated, it requires much skill, if played well, and affords considerable exercise. It is almost as interesting to watch as to play.

Shuffleboard is by no means a new game. It was popular in England, especially among the aristocracy, as early as the 15th century under the names of shove-groat, slide-groat and shovel penny. In comparatively recent years it spread to shipboard, where it proved exceptionally popular, soon becoming the leading deck sport. Nowadays a liner without one or several shuffleboard courts is unusual.

The game, as introduced in Florida, is played on a smoothly surfaced concrete slab 52 feet long by 6 feet wide and without expansion joints. It is played by either two or four persons,—singles or doubles—as is tennis. The object of the game is to place discs by means of the cue on the scoring diagram for points and at the same time to prevent the opponent from scoring. The rules are, in brief, as follows:

Eight wooden discs, four of which are black and four red, are needed. These discs are 1 inch thick and 6 inches in diameter. They weigh between 10 and 11¾ ounces. The cue shall not exceed 6 feet 3 inches in length, including the shoe.

The court is of two-course reinforced concrete, and is 6 inches thick. It is given a smooth, even surface so that the discs will slide easily.

In singles both players take their position at the same end of the court, changing ends after all discs are shot. In doubles the two partners play at opposite ends of the court, one team using red discs and the other black. Choice of color is determined by each player, if singles, and by each team, if doubles, playing one disc to the farthest dead line. The player whose disc is nearest this line has the choice of colors.

The first play of a game is started with a red disc which is played from the right side of the court, followed by the black, each alternating. Subsequent games are started by the winner.

Players place their discs in their respective half of the 10-off space and must play their four discs from this area. A penalty of five points off is imposed for violation of this rule. Players are not to step on or over the first line of the court. Violation of this rule also draws a five-point penalty.

If a player scores a disc, his opponent may drive it out or into the 10-off space. A disc obstructed by any solid object other than another disc is dead and must be removed from the court before another play is made. Coaching between partners is permitted in all except tournament games, where a penalty of ten points off is imposed for violation of this rule.

The scoring diagram is painted on the concrete as shown in the illustration. The 10-off area is 18 inches deep. The seven spaces are 2½ feet deep, as are the 8- and 10-point spaces. The line

ESTABLISHMENT OF SHUFFLEBOARD COURTS IN CITY PARKS POPULARIZES THAT SPORT AMONG RESIDENTS AND VISITORS AT ST. PETERSBURG, FLA.

AN AERIAL VIEW OF THE "FRONT GARDEN" OF ST. PETERSBURG

The Spa Municipal beach and pool in the foreground attract many to that Florida city. The domed building on the right houses the salt water pool, which will accommodate 500 people

dividing the 7 and 10-off spaces is 6 feet long, the width of the court. All lines are 2 inches wide. The distance between the base 10-off lines of each scoring diagram is 39 feet. Dead lines divide this into three equal areas 13 feet long.

All discs to be counted must be completely within the scoring space. If they touch a line they are ruled out. Discs that stop in the area between the farthest dead line and the starting space must be removed from the court before another play is made; however, a disc touching the dead line is not considered dead. All discs except those going out of bounds and those obstructed must remain where they stop until the final play is made and the score recorded. Violation of this rule draws a 5-point penalty.

Fifty points constitute a game. If both sides have 50 or more points, the side having the greater score is the winner. If a tie results, the eight discs are shot twice from each end and the one having the highest score is declared the winner.

It's a jolly good game, as the Englishman says, and one that is bound to find increased favor as more courts are installed in city parks and playgrounds.

HARVEY A. BRASSARD.

All Eau Claire Plays Kittenball

EAU CLAIRE, WIS.—There are numerous modifications of baseball, but kittenball played with a 12-inch ball on a diamond with the bases 45 feet apart has practically driven baseball out of the picture in Eau Claire.

In 1928, over 750 men were registered in various sections of the Twilight Kittenball League with 43 teams completing a ten-weeks schedule. This season, the game promises to be equally popular. Kittenball has been played for six years now, and the climax of the season comes immediately following the regular season, when a tournament is set up much the same as tennis or basketball tournaments are conducted. As many as 900 automobiles have been counted leaving the playing fields following the championship games, and estimated crowds of from 3,000 to 5,000 spectators have been present, many having foregone their dinner to attend the game. Crowds of 1,000 to 1,500 are not unusual.

The success of kittenball in Eau Claire lies in the inherent appeal of the game, in the organization of it, and in the minimum space required and expense involved. Practically everyone has played some baseball, and all of the elements of baseball are found in kittenball; in addition, the game is faster, seven innings seldom lasting over forty minutes, permitting full games after working hours. Skill and teamwork are exhibited in plenty, with just a bit more uncertainty than is found in baseball. Many a fielder has reached up to catch a batted ball only to have it jump out of his hands. There is plenty of free hitting, which always delights batters and spectators alike. By permitting no stealing until after the ball has passed home base on the pitch in, and with the shortened base line, just one-half of the regular baseball diamond, running is cut down to a minimum, which satisfies the average worker who likes a lot of action but not too much chasing. Big leaguers' legs give out first, and that characteristic aplies to the average fellow as well, and he will not indulge in any game which requires heavy running.

In addition, outside of the catcher and first baseman, none of the fields are permitted to use gloves, which limits the equipment aside from these exceptions to a bat and a ball. All teams are graded according to ability, based on past performance, into groups or divisions with six teams in each division. One game each week is played in a schedule drawn up for ten weeks, which permits each team to meet every other twice. In Eau Claire we start playing as early as possible in the spring, getting underway usually before the 15th of May, which permits a series of championship and tournament games during the month of August following the regular season's play. Games are played at 6:30 p. m. Umpires, provided for all of the games, bring to the games the balls used. We have found a lot of satisfaction in the plan of letting the winners keep the last ball in the play. Teams may register fifteen men, but no shifts or additions are permitted after one-half of the season is gone.

Individual medals are awarded to the members of the teams winning in sections

or divisions, with all divisions receiving the same awards, regardless of whether the teams are class A or class D teams. Winners of the tournaments are given suitable awards as well.

All of the activities of the league are conducted by a board of directors elected from the membership of the league.

A. T. SANDS,
Executive Secretary, Chamber of Commerce.

More Trees to Add Their Beauty to City's Thoroughfares

NEW ORLEANS, LA.—A double row of young live-oaks, 175 in all, and already 25 to 40 feet high, has been planted continuously between Lowerline Street and Napoleon Avenue, under supervision of Superintendent George Thomas of the New Orleans Parking Commission.

During the first three months of this year a total of 5,033 trees were set out, including many varieties, making a grand total of 40,000 trees in the city; 25,000 are expected to be added in the next five years, according to the program of the parking commission.

J. WALKER, ROSS, JR.

Now Operates Traffic Lights from Central Station in New York

NEW YORK CITY.—The major traffic-signal system for New York is now operated from a central control room at the West 30th Street Police Station with a minimum of friction and complication.

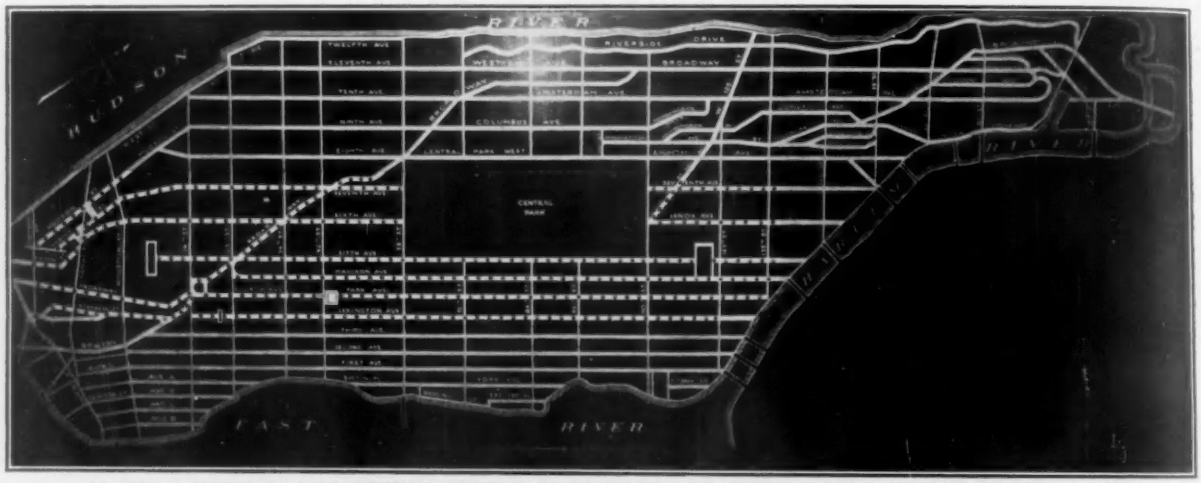
A large map, 4 feet 5½ inches wide and 12 feet 3½ inches long, depicts the operation of the entire system in miniature on the wall of the control room. Those thoroughfares on which traffic lights operate are outlined by small bulbs on the map that flash green and red in perfect accord with the actual signals on the streets they represent. The distance between avenues on the map is exaggerated in order to avoid placing the small lights too close together. Under this central arrangement, those in the control room can follow the operation of the system along Lexington, Fourth, Park, Madison, Fifth, Sixth and Seventh Avenues, on Broadway and along other streets included in the lower section of Manhattan.

As shown in the accompanying pictures, the equipment for each avenue in the system is housed in separate boxes in the control room. The top container in each instance is known as the relay box through which the impulse to change lights on the streets is given. Underneath each of these boxes for the individual avenues, are the motors that automatically control the traffic signals. Two of these motors are in boxes underneath the relay box while the third is in a box to the left as shown in the close-up photograph. Each of the motors represents a different time cycle. On the round discs, which can be seen in the center of the motors, are dials, by the turning of which the time of the green and red periods may be altered.

PHILIP D. HOYT,
First Deputy Police Commissioner.

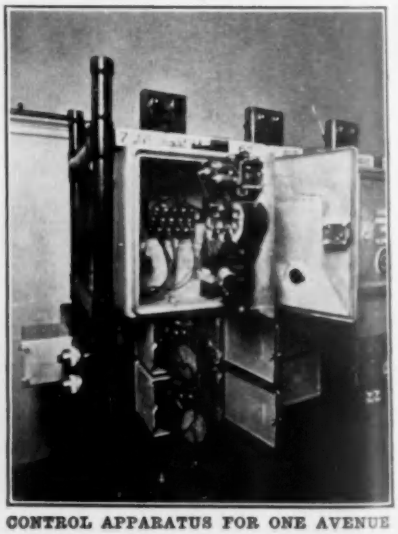
Open Air Movies Prove Popular Park Feature

SHREVEPORT, LA.—Free open air picture shows were started in the parks and playgrounds of Shreveport six years ago by the Department of Recreation, on a very small scale. At that time the Department had only one portable projector, and the pictures shown were the "free"



TRAFFIC CONTROL MAP AT CENTRAL CONTROL ROOM, WEST 30TH STREET POLICE STATION, NEW YORK CITY

VIEW OF EQUIPMENT IN CENTRAL CONTROL ROOM



CONTROL APPARATUS FOR ONE AVENUE

pictures, commonly known as educational pictures, secured from the Extension Department of the State Normal School. The program usually consisted of two educationals and a comedy. During this first season the city made no appropriation and the shows were limited to three recreation centers.

The city made a small appropriation the second season, and additional equipment was bought. The best pictures available—although not exactly suitable—were rented. Quite a bit of advertising on the screen in the form of "slides" was sold, and the revenue derived helped defray the expenses of the shows. Two more recreation centers were added, and several thousand more people saw shows.

By this time the shows had established themselves as a recreation activity, and the city made sufficient appropriation to put them on a large scale. Two trucks were equipped especially for the shows. Each truck was provided with two or twin machines. Shows are provided at two recreation centers every night except Sunday. By buying prints outright, the Supervisor of Recreation manages to get good, clean, wholesome subjects. The very best operators in the city are employed in this department. Fully 300,000 persons witnessed the shows during the past season and the Department of Recreation expects to accommodate fully 100,000 more this season.

There are twelve parks and playgrounds in Shreveport—eleven for white and one for colored people. Each center is equipped with a frame on which the curtain is hung. Park benches, boxes, stools, cushions and newspapers on the ground are the seating accommodations.

There has been only one criticism of the shows—that the subjects are "too tame." Such subjects as "Last Call," "The Freshie," "Kitty Kelly," "Hoosier Schoolmaster," "The Little Scout," "The Legend of Sleepy Hollow," Babe Ruth in "Heading Home," "Casey at the Bat" and "Paul Revere" were shown last season. A high standard has been set and will be adhered to strictly. The Park Board of Shreveport believes in the park picture show. It gives the working man with a large family an opportunity to see a good show at least once a week. He can go there in overalls and khaki shirt, enjoy smoking his pipe nad not be embarrassed. The tired mother has an opportunity to free herself of the care of the children for a little while. The children can talk, laugh and comment on the picture without embarrassing a tired and weary parent. A large per cent of the crowds are people who enjoy all the luxuries of life, and they enjoy the pictures in the outdoor "theaters" as much as anyone. The pictures are not run in competition with the commercial shows, which cooperate most heartily.

The advertising accounts now amount to a neat sum every season. As soon as the pictures are shown in Shreveport they are re-sold and the money derived is used to purchase pictures for the next season.

GROYER C. THAMES,
Supervisor, Department of Recreation.

Toledo Completes Its Street Marking Project

TOLEDO, OHIO.—In the January issue of THE AMERICAN CITY there was printed a story of Toledo's new wooden street-name signs installation. Mention was also made of new metal signs for residential streets and other streets where traffic lights are not used.

Installation of the metal signs will give the city a complete modern street-naming system, with large gold-lettered signs for the downtown district and main intersections, and a very distinctive metal sign for all other street intersections.

In selecting the metal markers for the 12,000 street designations throughout Toledo, the administration, under Mayor William T. Jackson, and Director of Public Service William H. Schroeder, spent much time and effort to procure the most serviceable street sign from the standpoint of legibility, lasting qualities and decorative and artistic appeal. The city's administration feels that the sign selected combines beauty with utility.

ONE OF TOLEDO'S WING-BRACKET STREET SIGNS

A special wing bracket was designed for use on the white way thoroughfares. This bracket will resist wind pressure and sustain the weight of linemen.

The very attractive sign plates which the bracket supports are made of rolled sheet brass with 3-inch countersunk letters. The letters have a double coating of aluminum paint against a field of double-coated black rubber elastic paint. The sign proper is framed, in pairs, in a 7/9-inch channel iron which is hot galvanized and aluminum coated; the ends are of malleable iron, hot galvanized and coated. Brass screws are used in the assembling, thereby eliminating weather streaking and rust marks. These signs are 20 x 28 inches over all.

For streets not using the winged post bracket, a standard made of 3-inch tubular pipe, supports a crisscross street marker, which is capped off with a spear-point finial for ornamental effect. The standard is well grounded in a concrete footing. Exposed parts of post, sign and assembly are double-coated with aluminum or rubber elastic paint, which it is claimed will neither blister, peel or check off.

About 3,000 street designators have already been installed. Barring accident, vandalism and the opening of new streets, the street-marking problem is settled here for some time to come.

Detailed information relative to this installation can be secured by writing William H. Schroeder, Director of Public Service, Toledo, Ohio.

VIRGIL SHEPPARD,
Secretary to the Mayor.

Unique Landscape Commission Achieving Far-Reaching Results

WHEELING, W. VA.—In December, 1927, a gift of $50,000 was made by W. E. Stone, a leading business man, as a nucleus for a fund to beautify the city and its approaches. The gift was made through the Chamber of Commerce, with the request that a commission of five citizens be elected by that body to make plans to expend the fund. The following outstanding representative citizens were accordingly selected: Geo. W. Lutz, H. F. Behrens, Joseph R. Naylor, A. W. Paul and A. A. Wilson. Mr. Lutz was made Chairman, and the writer as Manager of the Chamber of Commerce, was elected as Secretary-Treasurer. All serve without pay. Mr. Wilson recently died and his place has not been filled. Under the terms of the gift, the Commission has $10,000 each year for five years to expend on its program.

Immediately following its organization the Commission secured the cooperation of competent landscape architects and proceeded to develop plans for the beautification of certain sections of the city which would show to the greatest advantage. Following the completion of the work now under way, the Commission will have spent approximately $18,000 thus far, and its work has produced wonderful results.

In addition to the beautification plans of the Commission, the sum of approximately $2,000 annually for a period of five years is being offered to the schools, civic clubs, and community organizations in prizes, for the best beautifying projects carried out under their direction. The beautification work already carried out consists of systematic planting along the beautiful Chapline Street Boulevard and

National Highway within the city limits. These sections, which formerly were barren spots, now present a beautiful sight with their planting of hardy shrubs, etc.

The public beautification work of the Commission has created an unusual interest in private planting projects. Property owners and tenants are beginning to beautify their own places, in a greater and better way than heretofore.

Wheeling now has upward of 900 acres of public parks. The largest, Oglebay Park, has 750 acres, Wheeling Park has 130 acres, and there are several smaller public park areas. Oglebay Park was the gift of the late Col. E. W. Oglebay to the city about three years ago. In its present state, with extensive planting, gardens, driveways, bridlepaths and trails, the park is regarded as one of the most attractive and in its program of development one of the most unique in the country. Not only the Wheeling Park Commission, but the County Commissioners, the City Council of Wheeling, and numerous other agencies are cooperating with the Landscape Commission in its work.

H. P. CORCORAN,
Secretary-Treasurer, Wheeling Landscape Commission.

Handy-Kit Equipment for Crime Detection to Be Used by New York Police

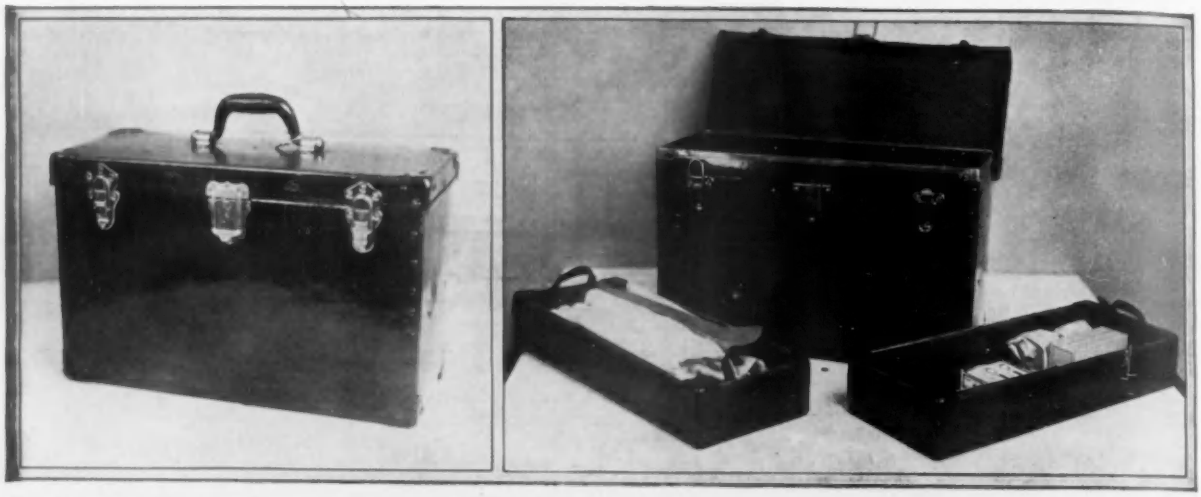
NEW YORK CITY.—Six black bags, each 22 inches long and 1 foot high, containing a practical assortment of devices for perfecting investigations of homicides, have been consigned to the homicide divisions of the five boroughs and to Police Headquarters in New York City by Police Commissioner Grover A. Whalen.

A book of instructions accompanies each set. The detectives will be required to memorize these instructions and to familiarize themselves with the equipment, so as to know exactly how to use each implement. Each bag is marked "Police Department, City of New York, Practical Criminal Science Outfit."

Included in each kit are a large magnifying glass, a flashlight to burn seven hours, one tape measure, a set of test tubes for the preservation of a victim's hair, fingernails, etc., one finger-print set including a vacuum gun for blowing powder, black and white powder, a pair of rubber gloves, one saw, a pair of tweezers, three chisels, a trouble-finder, a flashlight on a lanyard, paper, twine, a stenographer's notebook, one set of assorted crayons, calipers, a hammer and a steel mirror.

Since the reorganization of the Homicide Squad into five separate divisions by Commissioner Whalen, its complement has been increased from 20 to 70 men.

JOHN O'BRIEN,
Chief Inspector.



DETECTIVE KIT FOR HOMICIDE DIVISIONS OF POLICE DEPARTMENT, NEW YORK CITY

Making Sewage Disposal Pay Its Way

By GERALD J. WAGNER
CONSULTING ENGINEER, GRAND RAPIDS, MICH.

IN financing and operating a sewer and sewage-disposal system as a utility, we are not only faced with introducing the best practice in coordinating capital requirements, depreciation and operating requirements, but we have the problem of educating the public up to the point where it can see that it is preferable to operate the property as a utility similar to most water-works properties in the country to-day by making a specific charge based on the specific use of the sewer system rather than by raising the necessary revenues through general taxation. In view of developments in utility financing and operation during the past few years, there is absolutely no equity in distributing the cost of the sewer service as a whole on the basis of valuation, for the following reasons:

1. The addition of a sewage-disposal plant to the existing sewer system, which is required in nearly all cities today, adds a large amount annually to the cost of operating the sewer department. This cost is entirely dependent upon the amount and quality of sewage handled. This means that the total cost of operation is most equitably met when each individual or firm using the sewer system is charged on the basis of the amount of sewage emptied into the sewer system as well as the quality of the sewage, if it exceeds the average strength of waste discharged into the sewer. It is readily seen that in general taxation it is not practical to take into account this element, with the result that there is no equity in the charges made to such properties as hotels, furniture exhibition buildings, and freight-houses, which may have similar valuations but be radically different in the amount and kind of sewage each discharges into the sewers.

2. In every city there is a large amount of property exempt from city taxation, such as railroad property, schoolhouses, churches and certain of the public utilities. In the case of raising the revenues through general taxation, these people pay no portion of the cost of the sewer system nor of the heavy additional expense of sewage disposal which all cities are facing.

3. Under general taxation, the sewer department, which should be strictly on a business basis subject to all of the economic laws for properly coordinating capital requirements, depreciation and operating needs, is placed in the same category in a city budget with political expenditures such as are made by the welfare department, police, parks and other city departments. These are, and must be, governed, not by economical requirements, but by political requirements resulting from the state of prosperity in the community. The result in most cities is that year after year necessary expenditures for sewer requirements are postponed until the system is so reduced, both in size and in state of repairs, that large bond issues must be made to rehabilitate it because of the number of flooded basements and other operating troubles which have accumulated. Or, in the case of some sewage-disposal systems, the plants have gone foul because sufficient moneys have not been raised to properly operate them.

By operating the property as a utility, however, many of the disadvantages of raising the necessary funds through general taxation are eliminated, as is apparent from the following method of handling this matter proposed in a typical American city:

1. Practically all the sewer systems for years back have been designed and constructed merely for carrying sewage and storm water to the rivers, and in rendering this class of service it has been mostly a matter of raising the necessary capital for producing capacity sufficient to carry the sewage. This differs from the present practice in cities having sewage-disposal plants, for in such cases it becomes necessary, not only to produce capacity, but to treat all of the sanitary sewage, separating[1] the solids and emptying a practically clear effluent into the river. The sewer department thus renders a much greater service to the citizens of any city than has been true in the past, and the question is how best to raise the necessary moneys to meet this expense and how best to operate the plant so as to produce the greatest coordination between capital requirements, depreciation and operating expenses.

2. Past experience in many cities, and the present experience in cities still having no meter system of measuring the water used by its consumers, show that without a meter system the consumption in such cities ranges from 40 to 70 per cent more per capita than is true with a meter system. Even with meters, there are very many cases where owners have to pay large bills because their tenants have needlessly used an excess of water, knowing that they do not have to pay directly for the water. It seems logical, therefore, that the past experience of both municipally and privately owned utilities should be adopted in

Modern Rate Schedules Needed

During the past fifteen years, decisions in the many law suits between representatives of the public and the public utility corporations, regulation by municipal, state and the federal government of public utilities, and the co-operative methods pursued, especially during the last few years, by the representatives of the public and the companies have developed new standards of financing and operating utility properties. These are constantly being improved upon so as to produce the maximum equity between those investing their money, those controlling and managing the property, and the consumers who use the product and thereby furnish the necessary revenue for the company to meet its obligations.

In the case of privately owned utilities, the change has been a radical one from the old type of franchise under which, in most cases, there was a fixed price, to the present method of furnishing service on a cost basis supervised thru regulation which allows the rates to be changed up or down as the facts warrant.

There are very few of the old type of franchises still in existence and in the few cases still left, the cities have mostly waived the right to fix the rate requirements in view of the necessary higher rates required due to the increase of prices of labor and material since the war.

In the case of municipally owned utilities some improvement, especially in water works financing and operation, has been made, but in only very few cases is the best practice followed of using a modern rate schedule suitable to produce the greatest efficiency and resulting least cost.

G. J. W.

operating the sewer department in such a way that each user pays directly for his proportional use of the sewer system based on the amount of sewage he empties into the sewers.

3. Inasmuch as the meter system is the fundamental basis used in the sale of water, electricity, gas, electric light and power, it is logical that a measure of the sanitary sewage emptied into the sewer system should be the water meter. Each quarter the water-meter readings can serve for billing both the water and the sewage service. In the case of water from private sources which is emptied into the sewers, a special method of measurement must be used.

4. Starting with this fundamental and taking into account the similarity of service rendered by the sewer department as compared with other utilities, it is logical that all of the fundamentals of standard utility practice should be applied to the sewer service.

The following procedure should be followed to establish the sewer department as a utility:

1. An appraisal of the property should be made to determine the "fair value" of the property. This appraisal will serve as an opening entry on the books of the new utility as well as a means of keeping the city officials and the public posted as to what requirements in the way of return are necessary on this "fair value" to meet interest, sinking-fund and surplus requirements. It also serves to accurately determine the best financial structure to be used, and what relation the amount of bonds outstanding bears to the total 'fair value" of the property.

2. A standard set of utility accounts should be set up, so that detailed operating costs may be properly maintained, together with the necessary depreciation, interest, sinking-fund and surplus requirements.

3. The above information will serve for preparing at regular intervals standard operating statements for the use of city officials and the utility department in properly analyzing the financial, depreciation and operating requirements of the property, thus placing the property on the basis of scientific management.

As soon as more cities adopt the same standard methods and practices, a valuable amount of cost data will be at hand for comparative purposes. This is not true to-day even of various waterworks properties, but it is to be hoped that city officials will see the possibilities of increasing municipal efficiency by operating their sewer departments according to standard utility practice so as to be comparable with other similar plants.

4. The tentative rate schedule for a city of 154,000 population might be as follows:

(1) Service charge:

Size of meters	Annual Service Charge
⅝- and ¾-inch	$ 6.00
1 "	9.00
1¼ "	12.00
1½ "	15.00
2 "	27.00
3 "	96.00
4 "	168.00
6 "	381.00

(2) Consumption charge

1st	2,200	cu. ft. @ 5.0¢	per 100
next	7,800	" " @ 4.5¢	" 100
"	10,000	" " @ 4.0¢	" 100
"	30,000	" " @ 3.5¢	" 100
"	50,000	" " @ 3.0¢	" 100
"	100,000	" " @ 2.5¢	" 100
all over	200,000	" " @ 2.0¢	" 100

5. The quarterly bills for sanitary service for various consumption and sizes of meters would then be:

Service Charge	Water Used	Consumption Charge	Total Quarterly Charge	Total Yearly Charge
		¾-inch meters		
$1.50	1,000	$ .50	$ 2.00	$ 8.00
$1.50	1,300	.65	2.15	8.60
$1.50	2,200	1.10	2.60	10.40
$1.50	5,000	2.38	3.86	15.44
$1.50	10,000	4.61	6.11	24.44
		1-inch meters		
$2.25	1,000	.50	2.75	11.00
$2.25	1,300	.65	2.90	11.60
$2.25	2,200	1.10	3.35	13.40
$2.25	5,000	2.36	4.61	18.44
$2.25	10,000	4.61	6.86	27.44
$2.25	50,000	19.11	21.36	85.44
		2-inch meters		
$6.75	2,200	1.10	7.85	24.40
$6.75	5,000	2.36	9.11	36.44
$6.75	10,000	4.61	11.36	45.44
$6.75	50,000	19.11	25.86	103.44
$6.75	100,000	34.11	40.88	163.44
		6-inch meters		
$95.25	2,200	1.10	96.35	385.40
$95.25	5,000	2.36	97.61	390.44
$95.25	10,000	4.61	99.86	399.44
$95.25	50,000	19.11	114.36	457.44
$95.25	100,000	34.11	129.36	617.44
$95.25	500,000	119.11	214.36	857.44
$95.25	1,000,000	219.11	314.36	1,257.44

6. A two-part rate consisting of a service charge and a commodity charge should be chosen, for the following reasons:

(a) The service charge itself is based upon distributing the fixed costs and certain operating costs among the consumers on the basis of demand, using the capacities of the meters to measure the demand. While this may not be theoretically correct in all points, it is the most practical way at this time of handling the situation.

(b) The commodity charge is based on a sliding scale, so that it may be varied depending upon conditions, and particularly upon the strength of sewage which is emptied into the sewer, especially by the large consumers.

The rate schedule as designed is intended to raise sufficient revenues to meet the operating expenses, depreciation and the necessary fixed charges and surplus requirements of the sanitary system.

7. Inasmuch as the storm-water system, involving the removal of storm waters from the streets and private property during rainstorms, is a community proposition rather than the problem of any individual property owner, it is logical that the storm-water expense should be met out of general taxation. To this end an amount sufficient to cover the expense of operation, depreciation and fixed charges of the storm-water system is included in general taxation and paid to the sewer utility.

Other Advantages

In addition to the mere outline of the above procedure, the following may be said regarding the advantages of operating the sewer department as a utility according to the best modern practice of to-day:

1. In operating a utility property on the basis of service at cost it is advantageous in the first place to raise the revenues by a suitable rate schedule so that each property owner pays the actual cost of his use of the sewer system.

2. Operating the sewer department as a utility and separating it from the general taxation permits of raising revenues in such a way that the greatest efficiency is produced by the proper coordination between capital requirements, depreciation and operating expenses.

3. The sewage-disposal plant makes the sewer department a highly technical operating proposition, and lowest operating costs are produced by making necessary capital additions, retirement of obsolete property, and the use of proper operating methods. This is possible under the utility plan of operation but, as experience has shown, not so easily done when the expense of the entire sewer department is met through general taxation.

4. Modern utility operating methods when applied to municipal sewer system operation disclose the existence of many weak points. Past methods of operation, when new extensions were made under financial stress, often tended to reduce the efficiency of the several units in the effort to keep down the cost. Little, if any, attention was given to the part each unit was to play in the general system. Every year the inadequacy of this method of procedure becomes more apparent. Placing the sewage system upon a utility basis will enable the city to rehabilitate its system from the moneys raised as depreciation and surplus, thus cutting down maintenance and operating costs.

This, of course, will be directly reflected in the matter of rates, which again directly benefits each individual user. Finally, the big advantage of the utility plan is that if it is to be called taxation, it is direct taxation; in other words, each user pays for what he gets and is not charged indirectly, as is true in the case of so many of our civic expenses.

Placing municipally owned and operated utilities upon a basis comparable to that of a privately owned utility will bring to city officials much valuable experience and will enable them to understand and regulate the privately owned utilities serving the city with less friction, since the problems of private and municipal utilities are similar, and in most cases the contending parties will be able to come to an understanding without appealing to the state regulating commissions or the court.

There is no reason why in progressive cities all utilities, both municipally and privately owned, should not be operated according to modern utility practice, and as far as the sewer systems are concerned, there is no argument for maintaining them under general taxation subject to local political operation, which lacks much that is necessary to promote efficient operation.

Pennsylvania Emergency Aid Conducts Permanent Campaign for Cleaner Streets in Philadelphia

THE accompanying "before and after" of a Philadelphia alley is used through courtesy of Mrs. W. Howard Magoffin, Chairman of the Clean Streets Branch of the Emergency Aid of Pennsylvania, a splendid organization of Philadelphia women which has carried over from war times and which, like the Civic Club, has interested itself in cleaner streets for the home city.

"The streets of Philadelphia have remained littered with refuse of every character for as long a period in the past as can be remembered by those between the ages of crinoline and jazz," says Mrs. Magoffin. "And the citizens have always delighted in blaming the street-cleaning authorities—and have continued the practice of depositing dirt in the streets faster than it could be removed..

"The principal cause of street dirt," she continues, "is litter from ash and refuse collection. Ashes and rubbish are collected weekly, mixed in the receptacles. Regulations require that this refuse be placed in suitable containers or bundled so that it will not scatter. Little attention is paid to the regulations by residents. Wastes are placed upon the streets in worthless receptacles or simply dumped loosely; hence, conditions in advance of collection are anything but ideal, as an accompanying illustration will show.

"Even when refuse is properly deposited for collection by the householders, it is disturbed and scattered by scavengers operating in the early morning hours, and this in spite of the fact that municipal ordinances specifically prohibit this practice. Many suggestions have been offered for alleviation of the conditions caused, among them that collection should be from within the properties. This was found by a survey several years ago to be impracticable, or actually impossible in all but about three per cent of cases. The city, in general, is without alleys.

"Garbage is collected three times a week, and regulations provide that it be placed in tight, metal-covered containers at the curb. This regulation is also ignored. Receptacles are dilapidated, and unsanitary in the extreme.

"It is evident that no municipality can provide a sufficient force of men to remove all refuse immediately after it is deposited on the street, and that no efficiency in street cleaning will provide clean streets until the source of the evil is eliminated."

In its intensive campaign conducted some time ago, the Emergency Aid of Pennsylvania had the cooperation of the Department of Street Cleaning and the Department of Health. One of the outstanding features of the campaign was the tagging of improper refuse receptacles in inadequately bundled rubbish with a Bureau of Health Warning on which was printed the penalty for such violations. The society also had stenciled on pavements "Clean Up"—and it had painted on all the city-owned refuse cans, "Help To Keep Your City Clean." A conspicuous improvement was effected through this campaign. "Cleaner Streets for Philadelphia" is a permanent slogan of the organization, "and will continue to be," according to Mrs. Magoffin, "until all conditions which have inspired it have been remedied."

A PHILADELPHIA ALLEY BEFORE AND AFTER THE CLEAN-UP CAMPAIGN

Rescue Methods for Firemen

A Brief Description and Instructive Illustrations of Some Practical Ideas Presented at the Fire Fighters' Short Course Conducted at Iowa State College, Ames, Iowa

THE rescue methods outlined and depicted here are among those recommended for use by firemen by Commodore W. E. Longfellow, Assistant National Director of First Aid and Life Saving for the American Red Cross. With a few other photographs and concise descriptive matter, these illustrations have been offered in a bulletin issued by the Engineering Extension Service of the Iowa State College.

Keen interest has been evinced in the demonstrations here presented by a number of fire departments to whose attention they have been called and THE AMERICAN CITY offers the material for the consideration of all municipal officials who may find it useful.

Description of Methods

Fig. 1 shows the first major step in resuscitation for one who has been subjected to smoke, gas, drowning, electrocution or fumes. In addition to the operator, two firemen are promoting heat and circulation by rubbing the patient's arms and legs toward his body. Other illustrations, not included here, disclose how the bad air is forced out, as the operator leans his weight forward on his hands, pivoting from his knees. The good air then enters when the operator, after pressing on the lower ribs for three seconds, releases his hands suddenly and rests for two seconds before repeating.

Fig. 2 indicates the next move and advises that heat is the best stimulant for shock after injury. When the patient can swallow warm drinks such as tea, coffee or even hot water, they may be given to him in spoonful doses.

Triangular bandages made of a piece of sheeting one-half yard square should be carried by every fire-fighter in a pocket of the rubber coat, according to instructions given with Fig. 3. Such a bandage will stop bleeding, serve to bind on splints, blindfold horses or carry men.

By resting a patient on two rolled blankets and lashing him to the rounds of a ladder, he can be immobilized for fractures and transported comfortably. This is a suggestion for a broken-back splint, and the vertical view in Fig. 4 illustrates how a patient, badly injured, can be lifted on the level or through a trap door.

Ways to Carry Patient

In Fig. 5, one bearer stands between the legs of the patient and facing the patient's feet. He lifts the helpless individual's legs to his sides, as illustrated, and makes the hold secure by grasping the patient's feet in front of him. The second bearer grasps his hands under the arms, over the chest and in front of patient. This carry is used especially for bringing out suffocated persons without broken bones.

Another method not shown here is the adaptation of a straight-back chair for use as a stretcher. It is usually the best stretcher procurable around the home and is valuable for carrying bedridden persons down several flights of stairs. It should, of course, be tilted back in as nearly a horizontal position as possible and the bearer at the feet of the patient must back down the stairs. For an unconscious person, the carry shown in Fig. 6 is recommended, with bearers grasping each other's wrists under arm pits and knees of patient. The Indian grip, wrist grip or interlaced fingers are to be used in this instance in order to insure a firm hold.

FIG. 1. PRONE PRESSURE RESUSCITATION

Trench Bandage for broken jaw
Boxing Glove to stop bleeding from artery
Three Triangles
Open Bandage of the hip
Stove Pipe Knee Bandage
Ski Hitch for sprained ankle

FIG. 3. EIGHT USES OF THE TRIANGULAR BANDAGES

FIG. 2. KEEP PATIENT WARM AFTER SUFFOCATION OR INJURY

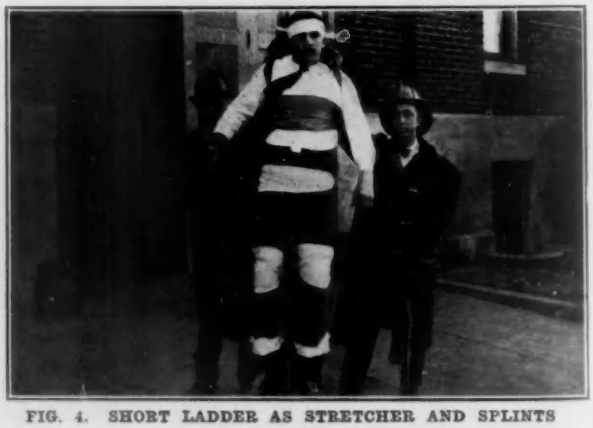


FIG. 4. SHORT LADDER AS STRETCHER AND SPLINTS

FIG. 5. WHEELBARROW CARRY FOR LIMP MAN

FIG. 9. LADIES' CHAIR CARRY

FIG. 6. ARM-CHAIR CARRY

FIG. 10. ROLLED-BLANKET STRETCHER

FIG. 7. BLANKET PIKE-POLE STRETCHER

FIG. 11. LIFTING PATIENT TO FIREMAN'S CARRY

FIG. 8. FIREMAN'S OR CROSS-BACK CARRY

FIG. 12. TIED-HANDS CARRY AS USED IN CLIMBING LADDER

Two pike poles laid upon an army blanket, with the ends of the blanket folded over, make a good stretcher as displayed in Fig. 7. The patient's weight produces enough friction of the fabric so that no fastening is necessary.

The method presented in Fig. 8 is also known as the Army Carry and leaves the rescuer with one hand free. For persons with an injured foot or lower leg, the carry shown in Fig. 9 is preferred. Each rescuer grasps his own left wrist with his right hand, and then with the left hand grasps the right wrist of his partner. The patient must be able to hang on to the necks of the bearers.

By rolling the edges of an army blanket toward the patient lying in the center of it and using six bearers, sufficient rigidity is imparted to carry any injured person as shown in Fig. 10. A three-man blanket stretcher is also adaptable. It is a development of the six-man stretcher and can be carried by three persons when help is scarce.

Fig. 11 illustrates how the fireman's carry should be developed. The patient should be placed in a face downward position, as shown in the right foreground. He then should be walked back to knees by sliding hands under the shoulder, as shown in the left foreground. Then the rescuer should take a new hold around the patient's waist and walk back on feet without moving toes. The rescuer then crosses wrists and pulls in on the same side, backing head under arm he is holding, then slipping arm under and around knee, and finally locking by grasping wrist as can be seen in the background.

Other Means Employed

The fireman's drag, not shown here, is also of great value for smoke or gas victims. The rescuer crosses the wrists of his patient and ties them over back to front. He then slides his head through the looped hands, straddles patient and crawls on his hands and knees.

In Fig. 12, the rescuer has both his hands free and the method employed follows the fireman's drag as described. Still another method is known as the double rescue using tied-hands carry. In this case, not depicted here, the fireman slips his head through the patient's locked hands, which permits him to carry the helpless individual on his back, and at the same time he leaves both his hands free to carry a second and lighter person.

Meeting an Emergency with Diesel Engines

By CHARLES RETALLIC

SUPERINTENDENT, MARQUETTE, MICH., MUNICIPAL ELECTRIC PLANT

SINCE 1889 the city of Marquette, Michigan, has maintained a municipal electric plant and has always furnished all the electric service used within the city. Starting at that early date, it can be ranked among the pioneer cities owning such facilities. Until a few years ago the city depended entirely upon service supplied by water power, which never before had failed, but when such a failure did occur it developed into a serious matter. In the past, when the plant load was much smaller than at present, a similar water shortage would perhaps not have caused much hardship or inconvenience.

The first plant built on the Dead River consisted of a 300-horsepower waterwheel arranged to belt-drive several small generators used for lighting service. Later two new wheels were installed, of 550- and 1,200-kva. capacity, the latter still being available for service if required. In 1911, a new dam was built. The two units were continued in regular service until 1920, when a heavier demand for current again made it necessary to increase the plant capacity. A new location was chosen about a mile below the old plant, which allowed a working head of 134 feet. Between the dam and the concrete surge tank there is almost a mile of 90-inch wood-stave penstock, and from this point to the power-house there are two 78-inch penstocks of similar construction. In this main plant are two water-wheels with 2,000-kva., two-phase generators, which normally supply all the electric service required in Marquette. The city owns about 400 acres on which these two plants are located.

The operating force of the hydro-electric plants consists of three operators and a chief engineer, for whom the city has built comfortable homes located conveniently near the main station.

In 1924 the city purchased an old powder-mill site of 480 acres, in order to secure additional water rights. This is also located on the Dead River and about a mile below the other plant. Here another hydro-electric plant has been built in which is installed an 825-kva. unit and operates under a 34-foot head. A novel feature of this installation is that it is entirely automatic in its operation, being started, stopped and controlled by remote control from the main plant. It does not require the service of an operator.

One of the large iron mining companies operating in this district built a large dam further up the Dead River, which fortunately provides a large water storage. Power requirements for the mining company are slightly in excess of those of the city, thereby affording a flow sufficient to meet the city needs for power. It would seem that unless some unforeseen contingency arose, these hydro-electric plants and available water storage would be ample for the city's requirements.

Very Unusual Water Shortage Creates Emergency

In 1925 such a contingency did arise, and in the latter part of that year the service was seriously crippled. The rainfall of the previous autumn had been far below normal, and was followed by a winter of little snow. The expected spring and summer rains failed to appear, and after months of anxious waiting the city was faced with a shortage of water-supply. At various times in the past some thought had been given to a standby plant, but since there had been no actual need, no definite action had been taken. Conditions finally became so bad that drastic restrictions had to be made in the use of electricity. Street-car service was abandoned, industries operating on city service were largely closed, and bakeries again had to resort to fuel. Current came on about 5 P.M. and was shut off at 9 P.M. Those who wanted light after this hour had to resort to lamps. In these desperate straits, prompt and immediate action had to be taken. Although a steam plant had once been considered, upon investigation it was found that diesel units were far superior for the standby service required for Marquette; furthermore, for such an emergency as this, the diesel plant could be built and the engines in service much sooner than a steam plant could. Diesels also had the advantage that they could be quickly started when needed and incurred practically no expense when idle.

On June 1, a 1,250-hp. Nordberg diesel engine with 1,100-kva. generator was purchased, and plant construction started on the powder-mill site, which afforded a water-supply from the nearby river and was convenient to railroad tracks. The power shortage continued to grow more serious and it was realized that in order to provide adequate service, greater standby capacity was required. Consequently, before the building was completed, a second unit of the same size and type was purchased, on September 1. Building construction was pushed with all possible haste, and as soon as the engines were received, erection was carried on day and night without cessation.

The first unit was placed in service the day before Thanksgiving, thereby keeping the promise to many housewives that they would be furnished with service for cooking the Thanksgiving

turkey. This one unit aided materially in relieving conditions and with the second unit on the line in January, practically normal service was again restored. Both units were continued in operation until April, when ample water was again available.

The diesel engines are in the care of one operator, who places each engine on the line on full load for two hours every two weeks in order to keep the engines in shape and ready for service if needed. This operator is also available for use in the hydro-electric plants, if required.

The diesel plant is of brick and steel construction, 45 x 95 feet. Storage for ten cars of fuel oil is provided in a tank of concrete construction. Mufflers and air filter chambers are also of concrete.

At the time the diesel plant was built, bonds to the amount of $275,000 were issued, which will be paid off in 1931. The annual net profit of the Lighting Department amounts to about $150,000. The following rates are in effect:

Lighting—5c per kwh. for the first 200 kwh.
4c per kwh. for the next 100 kwh.
3c per kwh. for the next 100 kwh.
Power—3c per kwh. for the first 200 kwh.
2c per kwh. for the next 200 kwh.
All above 400 at 1½c.
Heating—1c per kwh.

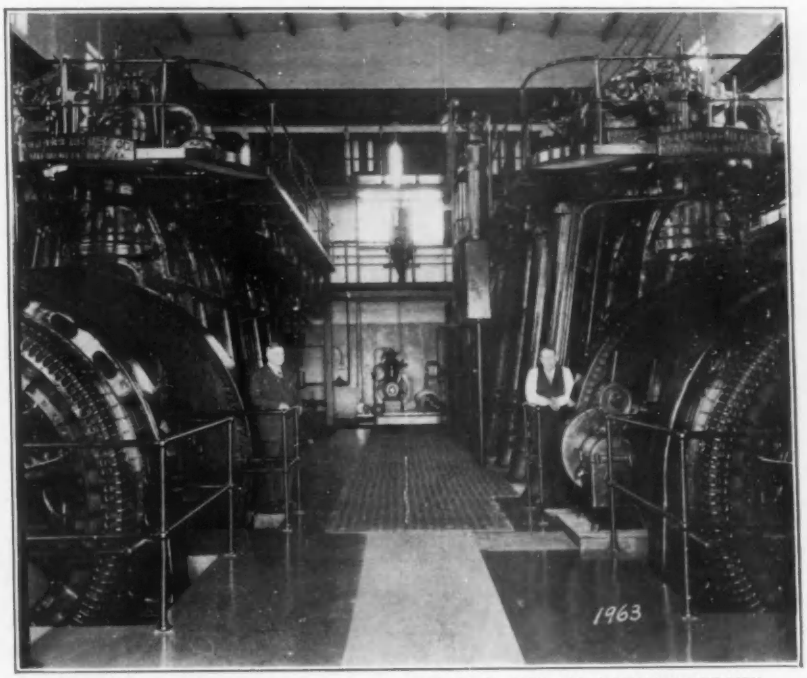
Although gas is available in Marquette, more than 950 electric household ranges are in service. This type of customer is being added to the city load at the rate of about twenty per month. In order to provide the city with street-car transportation, it practically subsidizes the local car line by furnishing it current at 3/10 of a cent per kwh. The Water Department also enjoys the low rate of 6/10 of a cent.

Contrary to the usual custom of municipal plants, city taxes are paid each year in the amount of approximately $18,000, the taxes being based on 1½ per cent of two-thirds of the book value of the property. The expense of caring for and maintaining a tourist camp, and a downtown comfort station, are also borne by the Lighting Department.

One reason for the success of the municipal plant ownership at Marquette is that it has never been a part in political issues. Marquette is governed by a commission form of government, and the power-plant comes under the Department of Electricity. The same commissioner has held office for five years, while the superintendent of the plant has been in the service for about thirty years.

Although the diesel plant has not been required for more than two years, the city feels that this has been a wise investment and an insurance against a failure of a source of power supply in the future. In case of a water shortage, the diesel plant will aid materially in conserving the water-supply, and should any one of the hydro-electric units fail, the diesel plant is available on a moment's notice. With no expense or deterioration when idle, it appears to be the ideal type of unit for use in connection with hydro-electric plants of the size of Marquette's.

Another advantage is that, should the city grow and more standby capacity be needed, units can be added and the overall high operating efficiency still be maintained—an outstanding advantage of the diesel engine.



INTERIOR VIEW OF MARQUETTE, MICHIGAN, MUNICIPAL ELECTRIC PLANT
The two 1,250-hp. Norberg diesel engines, used to supplement the water-power, are shown, with their generators

Analysis of Street Lighting Costs in 13 Cities of New York State

A tabulation prepared by J. Walter Ackerman, City Manager of Watertown, N. Y., to furnish various useful averages for comparative purposes

Name of City	Population 1925	Total Number Units	Total Candle Power	Total Yearly Cost	Average Candle Power per Unit	Candle Power per Capita	Per Capita Cost	Average Cost per Unit	No. of Persons Served by Each Unit	Yearly Cost per Candle Power
Amsterdam	35,260	813	421,870	$59,319	519	11.96	$1.68	$72.96	43	$ .141
Auburn	35,677	869	325,150	45,853	374	9.11	1.28	52.76	41	.141
Binghamton	71,915	1,954	302,960	52,742	155	4.21	.73	26.99	36	.174
Carthage	4,535	218	50,485	13,713	231	11.13	3.02	62.90	21	.270
Elmira	48,360	992	419,820	41,852	423	8.68	.86	42.19	48	.100
Gloversville	22,110	873	213,740	25,279	245	9.67	1.14	28.96	25	.118
Kingston	28,100	1,191	391,320	56,184	329	10.36	2.00	47.17	24	.140
Newburgh	30,419	754	315,440	43,850	418	10.37	1.44	58.16	40	.139
Olean	21,332	824	141,845	27,022	172	6.65	1.27	32.79	26	.190
Oswego	22,369	966	350,520	41,874	363	16.00	1.87	43.35	24	.12
Poughkeepsie	35,670	1,018	372,610	61,041	366	10.44	1.71	59.96	35	.164
Rome	30,328	771	286,138	36,504	371	9.43	1.20	47.35	39	.13
Watertown (old Utilities contract)	32,836	707	251,473	49,898	326	7.66	1.52	64.80	46	.198
Totals	418,911	11,960	3,843,371	555,130	4,292	125.67	19.72	640.34		$2.022
Computed averages					322	9.17	$1.33	$46.45	35	$ .144
Watertown (new system)	32,836	1,765	732,900	*50,000	415	22.32	$1.52	$28.32	19	$ .067

* The City of Watertown charges itself $50,000 for the Street Lighting service.

Better Housing for New York's Wage-Earners

What Has Happened in Less Than Two Years Under the State Housing Law

By GEORGE GOVE
SECRETARY, STATE BOARD OF HOUSING, NEW YORK

SINCE June, 1927, when the Municipal Assembly of the city of New York granted limited local taxation on buildings erected under the terms of the New York State Housing Law, seven model housing developments for wage-earners have been completed or projected with the approval of the New York State Board of Housing.

The first project to come under the State Housing Law was organized by the Amalgamated Clothing Workers of America, to house 303 families. Recently the Amalgamated Union has acquired an adjacent site for a new project, now under construction. When the new buildings are completed, the combined projects will house 2,500 people.

The third project approved by the State Board of Housing was erected by the Farband Housing Corporation, a limited dividend company sponsored by the Jewish National Workers' Alliance of America. This corporation constructed two building units six stories high, of brick and steel, with 504 rooms which rent at $11 a room a month.

Both the Amalgamated and Farband dwellings are cooperatively owned and operated.

The fourth project, now under construction in Brooklyn, will be completed in July of this year. These buildings will house 164 families at rentals ranging from $9.00 to $11.30 per room.

The fifth project has been started in the Navy Yard section of Brooklyn on a site now occupied by old insanitary buildings no longer fit for human habitation. This project will contain 376 rooms renting for about $10 per room.

The sixth will occupy the site, on the lower East Side of Manhattan, where former Gov. Alfred E. Smith was born.

Plans for the erection of a seventh project were recently announced, on the acquisition of two square blocks of property in the heart of the lower East Side now occupied by the R. Hoe Printing Press plant.

Provisions of the Law

The New York State Housing Law was designed to bring adequate housing within the economic reach of the average wage-earning family. More than two-thirds of all the families in the city of New York come within the wage-earning class having an average annual income of less than $2,500. Even the most favored families in this group cannot pay more than $600 a year in rent, or approximately $12.50 per room per month. Prior to the enactment of this law, the New York State Commission of Housing and Regional Planning had demonstrated that practically none of the new construction in New York City is available at this rental. In the year 1924, in which new construction exceeded all previous records, less than 3 per cent of the new dwellings was offered at rents less than $12.50 per room.

Over Fifteen Hundred Wage-Earning Families

will be accommodated in the seven model housing developments described in the accompanying article. These projects represent an investment of approximately $7,000,000. The monthly rental in these dwellings ranges from $8.50 to $12.50 per room per month. All the buildings represent higher standards of construction and planning than are ordinarily applied to dwellings of this class. By reducing land coverage and by architectural design, it has been possible to provide direct sunlight and through ventilation for every apartment. Every building is equipped with modern conveniences, including steam heat, electric light, hot and cold water and a bathroom for each apartment. Two of the model buildings contain automatic elevators.

To encourage construction at the lower rentals, the State Housing Law in effect sets up a partnership between private corporations acting in the public interest and the state. Corporations operating under the housing law must forego speculative profits, limit stock dividends, submit to supervision by the State Board of Housing, and effect every possible economy in construction and maintenance. The corporation is free from state taxes of all kinds. Municipalities are permitted to grant tax exemption on the buildings constructed, but not on the land. In these buildings rentals are limited to a maximum average of $12.50 per room per month in Manhattan, $11 in The Bronx and Brooklyn, and lower amounts in other communities. Any excess earnings are used to lower rentals.

Although some opposition has been expressed to the principle of tax exemption on improvements erected under this law, experience has now demonstrated that such exemption has increased the tax revenue of the city instead of depleting it. This had been observed in the case of 41 blocks surrounding and including the tax-exempt Metropolitan Life Insurance Company's development in the borough of Queens, where the actual increased revenue to the city in the third year following commencement of construction exceeded $200,000 a year—an amount far in excess of the taxes remitted on the new buildings.

In the case of the Amalgamated Housing project, the tax assessment on the land before the buildings were erected was $74,500. The present assessment is $325,000. In other cases also the effect has been to increase the city revenue.

Cost reduction under the terms of the Housing Law is obtained by limitation of the interest rate on mortgage loans to a maximum of 5 per cent per annum and on invested capital of 6 per cent per annum, by local tax exemption on the improvements, and by economies in planning, construction and maintenance under supervision of the State Board of Housing.

A feature of the act to which resort has not yet been had is the use of eminent domain proceedings in the acquisition of land.

Substantial Savings in Rent

Translated into terms of rent, the economies resulting from operation under the State Housing Law represent savings in excess of $8 per room per month over rents in the ordinary commercial building. The average rate paid for money for commercial operations in New York City is around 9 per cent. Under the Housing Law the rate is 5 per cent. Reduction of 1 per cent interest charges on such a project means a rental saving of approximately $1 per room per month. By avoiding certain fees and other charges in connection with organization and financing, 1 per cent more is saved. As the result of lower amortization charges, there is a saving of an additional 1 per cent.

These savings have made it possible for families earning not more than $1,800 a year to lift themselves out of some of the worst tenements in New York City into the best type of modern dwelling, where they are surrounded by parks, playgrounds and open spaces.

New legislation just enacted in New Jersey, under which slum clearance and low-cost housing will be undertaken through cooperation between the City of Newark and the Prudential Insurance Co., is outlined on page 5 of this issue.

Posterizing Public Accident Prevention

By EARL J. REEDER

SUPERVISING ENGINEER, NATIONAL SAFETY COUNCIL

THE public must be educated in accident prevention. Important as they are, well-built streets and good law-enforcement machinery are inadequate in preventing accidents unless the public is informed regarding safe driving and safe walking and inspired to voluntary observance of regulations.

City officials and civic organizations are realizing more and more that their best efforts can produce adequate results in accident prevention only when they have the public "sold" upon the need for safety. They are recognizing the need for accomplishing this dissemination of information and inspiration by means that have been demonstrated to be effective for advertising wares in the commercial world. The poster is taking its place as one of the outstanding features of safety publicity.

Adapted in size, subject matter, and art work, to various demands, it can be used for many purposes. One of the most common uses is on the street poster board taking a poster 25 x 38 inches in size. To enable the motor-vehicle or street-car passenger to observe and understand such a poster on a board at the street corner, the entrance to a park, or other similar conspicuous place, as he is speeded by, the poster must be attractive, to distinguish it from surrounding objects or landscape, brief and clear in statement, to insure an understanding of its meaning, and simply illustrated to emphasize its message.

These street board posters are usually changed monthly. They usually bear the name of the organization or city department providing and posting them, to give proper credit for this activity.

Safety posters that are used in schoolrooms, in garages, and in other similar places where they can be studied somewhat more deliberately, may and should be quite different from those used for street board posting. They can be smaller; illustrations can be somewhat more elaborate; and more words can be used in the message because the type can be smaller. The art work can generally be more elaborate, as it often must be to make the poster stand out in contrast with other interior surroundings.

As an important phase of its public safety propaganda and to give municipalities and civic organizations the advantage of quantity production in supplying their limited needs, the National Safety Council has developed public safety posters in three different sizes. For outside posting the size is 25 x 38 inches (commonly called one sheet). For inside posting where boards of adequate size are available, they are 17 x 23 inches. A still smaller size, 9 x 12, is available.

Naturally, uses would not permit the printing of any one poster in all three sizes. The messages and art work are properly adapted to different sizes and uses. A public safety poster is thus made available for every important need yet developed.

The National Safety Council offers to furnish sample copies of its posters upon request.

EDITORIAL NOTE.—Through the courtesy of the National Safety Council, one of the latest and best of its public safety posters is reproduced on the front cover of this issue of THE AMERICAN CITY. Another is here shown. The originals are printed in two colors and are of the 25 x 38-inch size.

Light-Colored Clothes for Pedestrians, or Adequate Highway Lighting, Urged as a Safety Measure

UNLESS pedestrians wear white, they are almost invisible to motorists at night upon unlighted roads, even with automobile headlights playing full upon them, it has been found by the General Electric Co.

Three tests were conducted, two of them with all highway lights extinguished.

In the first experiment, a man in dark clothes stood about 100 feet in front of an automobile, the headlights of which were functioning. The man could not be seen from the car, and under ordinary circumstances would not be discovered by the motorist until the latter was so close that only very sudden action would prevent an accident.

In the second experiment, a man wearing light-colored clothes and holding a white handkerchief stood at the same distance. The figure could be discerned in plenty of time for the motorist to avoid him, and the white handkerchief was easily seen.

The highway lights were then turned ond and the pedestrian in dark clothes was vividly revealed in silhouette against the glow of the lights, in the third test. The lighting specialists conducting these experiments reached the conclusion that only in two ways can a motorist see pedestrians on highways at a distance after dark. They are discernible if they wear light-colored clothes, preferably all-white garments, or if the highway has adequate highway lights.

THE EFFECT OF HIGHWAY LIGHTING UPON THE ABILITY TO SEE DARK OBJECTS

Left—Man in dark clothes, 100 feet from camera and automobile (high headlights and no street lights) is barely visible.
Center—Man in gray clothes, 100 feet from camera and automobile (high headlights and no street lights) is partly visible.
Right—Silhouette of man in dark clothes, 100 feet from camera and automobile (low headlights and street lights burning) is clearly visible.

THE MONTH IN PUBLIC HEALTH

Conducted by JAMES A. TOBEY, Dr. P. H.

Our Second Year

WITH this issue, The Month in Public Health begins its second year as a department of THE AMERICAN CITY. During the past twelve months we have endeavored to present current news and comment on public health matters of practical worth to city officials, civic workers, and other readers of this magazine. Some fifty different subjects have had mention from time to time, and these have apparently proved of interest and value. We should be glad to receive suggestions at any time as to topics in which our readers may be especially interested.

Courses in Sanitary Engineering

ONLY six institutions in the United States are now giving regular, distinct courses in sanitary engineering, though in ten other colleges and universities, optional courses are offered, usually as part of the civil engineering curriculum. Three other institutions formerly gave such courses, but have discontinued them. In 1928 there were 66 graduates in sanitary engineering, the largest number since 1918. The banner year, however, was 1916, when there were 85, and there were 71 in 1917. The total number of graduates in sanitary engineering from 1889 to 1928 is about 1,000.

This interesting information is given by I. W. Mendelsohn, Associate Sanitary Engineer of the United States Public Health Service, in an article in *Public Health Reports for* March 22, 1929. Mr. Mendelsohn lists the institutions which offer regular courses in sanitary engineering as follows:

Harvard University
Massachusetts Institute of Technology
Pennsylvania State College
State University of Iowa
University of California
University of North Carolina

Those which give optional courses are:

Agricultural and Mechanical College of Texas
Columbia University
Cornell University
Iowa State College
Stanford University
University of Illinois
University of Kansas
University of Michigan
University of Texas
West Virginia University

The pioneer course in sanitary engineering was established at Columbia in 1886, with the Massachusetts Institute of Technology a close second in 1889, and Illinois following in 1890. Those which dropped the course between 1924 and 1928 were Carnegie, Pittsburgh, and Villanova. There is, of course, much variation in the subjects included in the sanitary engineering curriculum, the emphasis in engineering or public health usually reflecting the personality of the professor in charge.

Health Demonstrations

DEMONSTRATIONS of effective public health activities, financed by large foundations and conducted with the cooperation of the local officials and citizens of the community, are now in operation or have been completed in a number of American cities. With the assistance of the Commonwealth Fund, such demonstrations have been undertaken at Fargo, N. Dak., in Rutherford County, Tenn., and in Athens and Clarke County, Ga., and subsequently turned over to the local authorities, while a similar demonstration is still under way in Marion County, Ore.

In New York, three demonstrations are being carried on at Syracuse, in Cattaraugus County, and in the Bellevue-Yorkville district of New York City, with the assistance of the Milbank Memorial Fund. These laboratory experiments in community health work have attracted much attention, both at home and abroad. At the New York Health Conference on March 15, Surgeon General H. S. Cumming of the United States Public Health Service announced that the League of Nations is to discuss these demonstrations at its next meeting in Geneva. Dr. Cumming has been invited to present the subject, and Prof. C.-E. A. Winslow, Dr. P. H., of Yale, will discuss municipal health on the same occasion.

At a luncheon held in New York on March 15, to consider the Bellevue-Yorkville Health Demonstration, Health Commissioner S. W. Wynne stated that this demonstration offers an excellent laboratory where public health programs can be tried out in the endeavor to ascertain the most effective procedure. Dr. Wynne also pointed out that the day is at hand when the viewpoint of medical and dental practitioners should be changed from curative to preventive medicine, a statement which met with agreement from the President of the State Medical Society, Dr. Gordon Heyd, who was also a speaker.

Health Tabloids

DAILY newspapers, tabloid in form, were distributed in New York and Brooklyn for a few days in February and March in order to interest the people in the war on diphtheria. Known as the *Health World* and the *Health News*, these replicas of the type of daily journalism which is popular with a large class of people were exceedingly effective in arousing parents to have their children immunized against this preventable disease. These newspapers were issued by the Diphtheria Prevention Commission of the Department of Health, which probably still has a few sample copies.

A Novel Health Report

FROM the Department of Meat and Milk Inspection of the City of Valdosta, Ga., comes a health report of a rather unique character. It consists of seven pages of blueprints, each somewhat over a foot square. The cover has a drawing of Thomas A. Edison and a poem, "The Slaves of the Lamp," by Alexander Skinner. Each of the other six pages is decorated with photographs illustrating sanitary conditions, frequently before and after the activities of the Department, the head of which is E. D. King, Jr., D.V.M., as Meat and Milk Inspector. Such a color report ought to be of interest to the average citizen, as well as to the city fathers.

Airports and Public Health

THE new day in air transportation is likely to bring with it new problems in public health, according to an anonymous writer in the Illinois *Health Messenger* for March 15, 1929. It is pointed out that "in the past people have suffered tremendous economic and health losses because they did not fully realize the character and importance of health problems when populations began to spring up around traffic terminals." These changes have caused the abandonment or replacement of sewer systems, the widening of streets, and the development of epidemics, according to this writer.

With the advent of air transportation, it is believed that sewer and water systems will have to be planned on a new scale, quarantine methods changed, and other new health problems met. Population may tend to center around airway terminals in the future just as it has settled about railroad and waterway terminals in the past.

These matters are indeed worthy of consideration, and the time to take them up is now, and not, as has too often been the experience in the past, after damage has been done. It may be some time before these problems become acute, but procrastination is always a poor rule when public health is concerned.

Road Tar Poisoning

PERSONS who work with road tar products should take care not to breathe fumes given off when these tars are heated, as these fumes may be poisonous in the extreme and their inhalation cause much physical trouble. In the

Journal of the American Medical Association for March 2, 1929, Dr. Carey P. McCord reports the case of a tar wagon tender engaged in highway construction whose tar boiler was opened by children. He ran a third of a mile, arrived out of breath, breathed fumes for a minute before he got the valves shut off, and then went into convulsions. For the last three years he has been in a hospital, bedridden, paralyzed, and mentally aberrant. It pays to be careful where industrial poisons can cause harm.

Clean-up Time

SPRING is the time of year when clean-up and paint-up campaigns are launched. Civic cleanliness is an important virtue, though perhaps more significant from the economic and esthetic standpoint than that of public health. Cleaning-up is a desirable procedure and should be industriously indulged in and promoted, without, however, losing sight of the fact that doing it is not a substitute for continuous sanitation and for regular efforts to promote public health in the most efficient manner.

Sanitary and Insanitary Drinking Fountains

A RESOLUTION which speaks for itself is the following on drinking fountains, which was passed by the Minnesota State Board of Health on January 15, 1929:

"*Whereas*, public drinking fountains have largely replaced the common drinking cup, and are provided in a great many places accessible to the public, and

"*Whereas*, investigations have shown that disease-producing bacteria may be transmitted from one person to another through the use of improperly constructed or improperly operated drinking fountains, and

Whereas, the observations made by the State Board of Health have revealed the presence of insanitary types of drinking fountains in many public and semi-public places throughout the state,

"*Therefore, be it resolved*, that the attention of the public be drawn to the fact that not all drinking fountains are satisfactory, and that to be sanitary, drinking fountains should conform with the following general requirements:

"(1) The jet of water emerging from the fountain should be slanting so that discharged water does not fall back onto the orifice;

"(2) The orifice from which the water emerges should be protected in such a manner that it cannot be touched by the lips or be contaminated by droppings from the mouth or splashings from the base beneath the orifice; and

"(3) An adequate supply of pure water under sufficient pressure, properly controlled, should be provided in order to insure satisfactory operation of the fountain."

An Outline for a Model Health Ordinance

THE proven essentials for local health legislation have been prepared by a sub-commitee of the Committee on Administrative Practice of the American Public Health Association, of which W. F. Walker, Dr. P. H., is Field Director, and are presented in the following pages, with the permission of the Committee. The sub-committee responsible for this valuable report, which was accepted in preliminary form at the Chicago meeting of the Association in October, 1928, and has now been released in revised form as of March 1, 1929, consisted of Henry F. Vaughan, Dr. P. H., Commissioner of Health of Detroit, Chairman; E. L. Bishop, M.D., State Commissioner of Health of Tennessee; Haven Emerson, M.D., of Columbia University, New York; James A. Tobey, LL.B., Dr. P. H., of New York; and Huntington Williams, M. D., Dr. P. H., District State Health Officer of New York. This committee was assisted by George B. Darling of Detroit.

This statement of essentials, listing the minimum requirements for local health laws, will serve as a guide to the formulation of the basic laws applicable to county, district, and municipal health organization and practice. The provisions set forth may be included in state laws, municipal charters, or even in city ordinances, as local conditions warrant. While impossible to prepare a model ordinance of universal application, there are certain basic principles common to health work in all communities and these have been covered in the material which follows:

Organization of Local Health Authority

1. There should be a local Board of Health (or similar body) to be appointed by the executive head of the administrative unit (municipality, county, etc.).

2. The Board of Health should preferably consist of five members appointed for overlapping terms of office so that one position becomes vacant and one appointment is made each year. The health officer should not be a member of the Board of Health.

3. The Board of Health should be authorized to appoint the health officer, and should have no executive functions or appointive power except with regard to the health officer.

4. A member of the Board of Health should not be dismissed during his office, except for inefficiency, neglect of duty, or misconduct in office, upon written charges by the Chief Executive, after an opportunity of being heard in his defense.

5. At least two members of the Board of Health should be regularly qualified physicians licensed to practice medicine in the state.

6. Board members should serve without pay.

7. The Board of Health should hold regular meetings at specified time and place.

Powers of Local Health Authority

1. The Board of Health should have the power to adopt rules and regulations as to the conduct of its business.

2. The Board of Health should have the power to prepare, adopt and enforce a sanitary code.

3. The Board of Health should approve the budget of the Health Department and submit the same to the proper authority.

4. It should be the duty of the Board of Health to aid in the enforcement of, and so far as practicable to enforce, all laws of the state, applicable within its jurisdiction, for the preservation of human life.

5. The Board of Health should have the authority, after proper investigation, to declare matters or things to be a nuisance and detrimental to the public health, and take necessary steps for the abatement of such nuisance.

6. The Board of Health should have the power to take and hold property by purchase, gift, bequest, or otherwise, with the consent of the properly constituted public authority.

7. The Board of Health should have the authority to sell, convey, or lease lands with the approval of the properly constituted public authorities.

8. The Board of Health should have the authority to make contracts with the approval of the properly constituted public authorities to carry out the objects and purposes of the Board.

9. The Board of Health should have the authority to require reports and information from any dispensary, hospital, asylum, infirmary, prison, school, or other institution, or from any physician, midwife, undertaker, or other individual relative to conditions of health and safety of patients or attendants.

10. In emergency the Board of Health should have the power to employ any reasonable measures necessary for the protection of public health not inconsistent with law and the regulations of the properly constituted health authorities, and may appeal for this purpose to the appropriating body for funds in excess of the annual appropriation.

11. The Board of Health, through its agent, the health officer, should

(a) Study any matter affecting the security of life or health, or preservation and improvement of health within its jurisdiction.

(b) Use all reasonable means for ascertaining the existence and cause of disease or peril to life or health and for averting the same throughout its jurisdiction, and should promptly cause all

proper information in its possession to be sent to other health authorities which may request the same, and should add thereto such useful suggestions as the experience of the Board may supply.

(c) Provide for the isolation of those sick with communicable disease and for their treatment in a hospital or elsewhere. It should have authority to hold for observation those suspected of suffering from a communicable disease or having been exposed to such disease, for such time and in such place as is necessary in the interest of the public health.

(d) Have authority to take possession of, confiscate or destroy, animal, matter, or things, believed to be capable of spreading disease.

(e) Have the right of entry and search for the protection of life and health.

The Health Officer

1. The Health Officer should possess at least one of the three following qualifications: (1) a graduate of a recognized medical school, who has had five years' experience in the practice of his profession, and in addition to such practice has had at least one year's training in public health work, or (2) a graduate of a recognized medical school who has had three years' experience in public health work or at least one year's collegiate training in the field, or (3) a graduate of not less than two years' work in public health from some reputable institute of learning.

2. The Health Officer should not be dismissed from his office, except for inefficiency, neglect of duty, or misconduct in office, upon written charges of the Board of Health, after an opportunity of being publicly heard in his defense.

3. The Health Officer should devote whole-time to his duty. (By whole-time it is understood that the Health Officer will be required to spend the usual business day in official duties.)

4. The Health Officer's salary, which should be determined by the Board of Health, should be in proportion to his responsibility and the size of the community.

5. The Health Officer should appoint and prescribe the duties of the staff of the Health Department.

Communicable Disease Control

1. There should be an ordinance (or rules and regulations of the Board of Health) requiring the reporting of all diseases appearing upon the list prepared by the United States Public Health Service.

2. There should be an ordinance providing for the control of communicable diseases which should include at least the following items:

(a) Notification
(b) Investigation, authorization
(c) Laboratory verification
(d) Supervision of cases, contracts, carriers, or susceptibles
(e) Examination and control of food handlers
(f) Removal to hospital or institution for isolation
(g) Disposal of the dead
(h) Disposal of the premises
(i) Control of animals
(j) Emergency powers

(In any ordinance covering the above points, authorization to elaborate by regulations should be included.)

Vital Statistics

1. There should be a local ordinance which contains the essentials of the model vital statistics law. (A full time local health officer should be eligible as registrar.)

2. A proper permit should be required by ordinance for the disposal of bodies or their removal from the city.

3. Funerals and disposition of bodies dead from communicable disease should be subject to the rules and regulations of the Board of Health.

Institutional and Occupational Care

1. There should be an ordinance giving the Board of Health authority to license and supervise certain classes of occupations and institutions relating in any way to public health and such regulations should include hospitals, dispensaries, institutions, laboratories, homes for children, midwives, and occupations likely to be a hazard to health.

General Sanitation

1. There should be an ordinance for the control and abatement of nuisances and the Board of Health should have the power to declare and abate such nuisances.

2. There should be an ordinance prohibiting the discharge of dangerous smoke, odors, gas or dust into the atmosphere.

3. There should be an ordinance providing that every dwelling, building or place where human beings live, are employed or congregate, be provided with a sanitary means of sewage disposal so as to prevent soil and water pollution and the dissemination of disease by means of flies.

4. There should be an ordinance requiring that all water served for human consumption should conform with the U. S. Treasury standards as promulgated by the United States Public Health Service.

5. There should be an ordinance regulating the sanitation of camps and camp sites.

Food and Drugs

1. There should be an ordinance requiring the licensing of all food establishments.

2. There should be an ordinance giving the Board of Health the power to adopt and promulgate rules and regulations governing food establishments.

Industrial Hygiene

1. There should be an ordinance which provides that all manufacturing and industrial plants where processes are used which are dangerous to the health of the workers be subject to special rules and regulations of the Board of Health.

Medical Examination of School Children

1. There should be an ordinance requiring a medical examination of all children on admission to school, whether public, parochial, or private, and the adequate health supervision of children during the years of school attendance.

How Municipal Departments Might Tell Their Stories Through Illustrated Sections of the Sunday Newspapers

To the Editor of THE AMERICAN CITY:

I have often thought that—as an educational feature—many of our city governments might arrange with those Sunday newspapers publishing illustrated sections to devote one page each week to photographs depicting some of the work of various city service departments.

This idea could be realized in the form of a series of departmental photographs offered in the newspapers over a period of months. One Sunday, the pictures might present some of the activities of the Fire Department, the next week the Police Department, then of the Water Department, and so on through the entire group of city departments. Pages assigned for this feature, however, should carry pictures of actual departmental functions, rather than concentrate simply on photographs of the personnel.

Both the city officials and the newspapers, I believe, would benefit from some such plan, while the value to the general public in an educational way is quite obvious. The series would help the city government by explaining its activities to the people in an attractive and inexpensive manner. Favorable publicity would be afforded the many departments which do a tremendous amount of work but which are seldom praised and often criticized, by uninformed citizens.

The newspapers would benefit because such a feature would appeal to practically every reader. Residents have been inclined to take pure water, clean streets, efficient refuse removal, well-operated sewer systems, proper police and fire protection, and plenty of city parks, as a mere matter of course. Since the operations of all these city departments so directly affect the life of the average householder, however, he is beginning to take a greater interest in what the city does for his comfort. And in this day of ambitious programs for city improvements, there are few newspaper readers in the average American city who do not have some interest in civic betterment.

Such a feature, incidentally, would give the taxpayer an accurate picture of what his city government is doing, without the exaggerations of political advertising.

I should like to hear that some city government is following, or will follow, this plan and to learn through THE AMERICAN CITY just how it works out.

CHARLES K. BASSETT.

Buffalo, N. Y.

Items of Interest from Here and There

International Federation for Housing and Town Planning to Meet in Rome in September

ON invitation of the Governor of Rome, and with the hearty support of the principal Italian municipalities, Institutes for People's Housing, and Town Planning Associations, the International Federation for Housing and Town Planning will hold its 1929 Congress in Italy, September 12 to 19. The proceedings will open on September 12 with a preliminary meeting in Milan, whence the Congress will proceed to Rome for sessions September 14 to 19, after which there will be a visit to Naples, which will enable delegates to visit Pompeii, Capri and Vesuvius.

The principal subjects to be discussed at the conference will be: The Historical Development of Milan; The Historical Development of the Plan of Rome and its Significance for Modern Town Planners; The Need for Research in Rural and Urban Development; Replanning Old and Historic Towns to Meet Modern Conditions; Methods of Planning for the Expansion of Old and Historic Towns; Financing Working-Class and Middle-Class Housing, with Special Reference to Methods of Attracting New Capital; and Planning Apartment Housing Schemes in Large Towns.

Additional information can be secured by addressing The Organizing Secretary, International Federation for Housing and Town Planning, 25, Bedford Row, London, W. C. 1., England.

Highway Education Board Safety Competition Prizes Aggregate $6,500

THT eighth annual safety essay and lesson contest open to elementary school pupils and elementary school teachers of the nation has been announced by the Highway Education Board, Washington, D. C., with a trip to the National Capital, a gold medal, and a check for $500 among the awards, which include cash prizes aggregating $6,500.

The pupil winning the essay prize will receive, in addition to the trip to Washington with all expenses paid, a gold medal, a check for $15, and a gold watch, while the teacher submitting the winning lesson will upon her arrival in Washington receive a check for $500.

Contests in each state are conducted with the aid and cooperation of the State Department of Education, and other educational authorities. In the pupils' contest, 442 medals and a like number of cash prizes are offered as state awards. Pupils who rank second and third to the winner of the national prize also receive gold watches, appropriately engraved, and of a value only slightly less than that awarded the first prize winner. National winners are chosen by a process of elimination from those who have ranked first in their respective states.

Awards to teachers are less numerous and more substantial. For the best lesson the Board offers the visit to Washington of four or five days duration, and a check for $500. Second and third national prizes in the lesson contest are $300 and $200 cash, respectively. The prizes are given by the National Automobile Chamber of Commerce.

Milwaukee Plans New House-Numbering System

AFTER several years of agitation, Milwaukee is to have a new system of house numbering and street naming as result of the adoption by the Common Council recently of the Schwada plan.

The new ordinance, which will become effective January 1, 1930, establishes certain streets as the north-and-south and east-and-west base lines, and embraces the plan prepared by J. P. Schwada, City Engineer. It also establishes the principle of 100 numbers to the block and instructs the city engineer to assign each house its respective number in accordance with the general plan, and to order property owners to place these numbers in a conspicuous place at the entrance to their houses. For the first six months after the ordinance is effective, the old house numbers will be shown along with the new.

Practically all the present numbers will be changed as well as the street names. All the numbered streets on the south side must be made to accord with the numbered streets on the west side and, generally speaking, all the streets will be provided with the prefix East or West or North or South, and with the suffix, Avenue or Street. Mr. Schwada has been instructed to present a plan for the necessary changes in streets names to accord with the new numbering system.

City Makes Large Purchase of Automobiles on Turn-in Basis

IN the case of a recent purchase of automobiles by the city of Cincinnati, Ohio, there was adopted the procedure, believed to be unusual there and in cities generally, of buying a group of 45 or more cars, calling for bids on three alternative bases: outright purchase of from 46 to 55 automobiles; purchase of 45 automobiles in conjunction with the turning-in of 45 used cars; and the purchase of from 46 to 55 automobiles under an agreement for the seller to maintain the cars for two years, including full service and replacements due to ordinary wear and tear, with an option to the bidder to include an offer for the purchase of used cars.

Bids were received from the following companies: The Ford Company, Whippet, and four dealers in Cincinnati handling Chevrolets. These companies made an analysis of the old cars which were to be turned in and submitted a value on each car separately, not giving a blanket bid for the 45 old cars. The highest bid on old cars was from a Chevrolet dealer; it was for $3,800 total on the 45 cars. This turn-in value, in connection with their bid on the new cars, gave what was considered to be the best value, taking all factors into consideration.

The city manager was so much pleased with the results obtained, that he issued an order to all departments stating, "As far as possible, in the purchase of cars, the complete requirement for a full year for all departments will be advertised at one letting, and, as far as possible, an old car will be turned in, in each case."

New York Police Schools Have Large Attendance

THE nine zone police training schools in New York State which operated during the past winter for the first time, had a combined weekly attendance average of 2,146 policemen from the cities and villages, it is announced by the New York State Conference of Mayors.

Average weekly attendance by schools was: Binghamton, 192; Buffalo, 410; Kingston, 120; Mineola, 512; Rochester, 361; Schenectady, 85; Troy, 107; Utica, 156, and White Plains, 140.

A zone school in Syracuse and two extension schools in Watertown and Plattsburg will open soon for a ten-week course for policemen in that zone and the northern section of the state.

Definite Plans for Firemen's Training

THE training schools for firemen in New York State will operate this summer on Mondays, Wednesdays and Fridays for a period of ten weeks in a centrally located city of each of the thirteen designated zones.

This definite information and an announcement of the subjects to be taught have been released by the New York State Conference of Mayors and the State Fire Chiefs' Association, following six weeks of planning. One lecture and two training movements will be given each Monday and repeated the other two days. This arrangement will permit the cities and first-class villages to send a large number of men to the schools by dividing them into three groups and having one group attend one class a week. The lecture is to be given at each morning session, and the training on the fire-tower, and with apparatus, hose and ladders, will take place in the afternoon.

Subjects of the lectures will be Fire Prevention, Salvage Work, Care of Equipment, Courtesy of Men to Officers and the Public, Care and Driving of Motor Apparatus, First Aid and Resuscitation, Ventilation, Sprinkler Systems, Hydraulics of Fire Streams, and Special Fire Hazards.

The zone schools are to be held in Buffalo, Rochester, Syracuse, Utica, Schenectady, Albany, Poughkeepsie, Watertown, Yonkers, Glen Cove, Binghamton and Kingston. A school for instructors was held in Utica beginning on April 21 and continued for a week.

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Prepared by
FRANK B. WILLIAMS
Author of "The Law of City Planning and Zoning"

ZONING and PLANNING NOTES

From Data collected by the Zoning Committee of New York (253 Broadway)

Recent Zoning Statutes and Ordinances

ARKANSAS.—Planning and Zoning Enabling Act, March, 1929.

GOSHEN, IND.—Ordinance, March 4, 1929.

BOGOTA, N. J.—Ordinance, March 14, 1929.

VENTNOR, N. J.—Ordinance, May 14, 1929.

BRIARCLIFF MANOR, N. Y.—Ordinance, August 21, 1928.

MIDDLETOWN, N. Y.—Ordinance, November 26, 1928.

Public Garages

FLORIDA.—*Harz* v. *Paxton*, 120 So. 3.—The regulation of the erection of gasoline filling stations and public garages is within the police power of the state, and this power may be delegated to a city.

Platting as Dedication

ILLINOIS.—*Nimpfer* v. *Village of Fox Lake*, 165 N. E. 143.—The making and recording of a plat subdivided into lots and streets is merely an offer to dedicate the streets, binding upon the maker of the plat but not on the municipal corporation until accepted by it.

The approval by the city council of a plat made and recorded by the property owner is not an acceptance of the streets and the city may still elect what streets on the plat shall become public highways.

The property owner's offer to dedicate streets by making and recording a plat may be revoked by the owner or his grantee at any time before acceptance by the public.

Perpetual Alienation of Public Streets

LOUISIANA.—*City of Shreveport* v. *Kansas City, S. & G. Railway Co.*, 120 So. 290.—An ordinance granting a railway company the right to maintain bridge piers encroaching upon the lower portion of a street in perpetuity is void as an attempt to barter away the police power; which is beyond the power of the city or the state; and a contract to create the right, being invalid, is not protected by the United States Constitution.

Injunction Against Pending Legislation

MARYLAND.—*Broening* v. *Haley*, 144 Atl. 836.—City authorities will not be enjoined from passing an ordinance changing the nature of an area under the zoning plan so that the complainant could not proceed with plans for building in accordance with previous zoning, since only in exceptional cases will the court interfere in advance with the exercise of legislative power; a complainant's remedy being to enjoin enforcement after passage.

Reopening of Determination by Board of Appeals

NEW YORK.—*In re Collins*, Supreme Court, Bronx County, reported in *N. Y. Law Journal*, March 29, 1929.—The Board of Standards and Appeals, having decided an appeal, is without power to reopen the matter and reverse its prior determination upon the same facts. Previous cases to the same effect cited and followed.

Definition of "Contrary to Public Interest" and "Hardship"; Board of Appeals May Not Nullify Ordinance; Force of Remonstrances of Property Owners; Right to Replace One Nonconforming Structure with Another

RHODE ISLAND.—*Heffernan* v. *Zoning Board of Review of City of Cranston*, 144 Atl. 674.—In an application for a variance, the words "contrary to the public interest" mean what in a sensible man's judgment would unduly conflict with ordinance provisions, and the term "hardship" refers to loss or hardship arising from interference with ordinary legal property rights peculiar to applicant's situation and of such a degree of severity that its imposition is not necessary to carry out the spirit of the ordinance.

The zoning board of review is without power to nullify a zoning ordinance under the guise of variances by permitting the erection of a building for business purposes in a residence district on the theory that the growth of the city necessitates that the street at the point involved will become more and more a business district.

The remonstrances of other landowners in the neighborhod against granting the variance, although by no means conclusive, should be taken into consideration by the board in the exercise of its discretion.

The zoning board of review in passing upon an application for a variance may view the locality and in the exercise of its discretion may consider matters well known to its members which relate to the local situation; but as to matters not well known and apparent they should give the applicant an opportunity to be heard.

The denial of a variance to permit another building on a lot zoned for residence in place of a wooden structure in which a grocery store was being conducted when the zoning ordinance was adopted does not render the zoning ordinance unconstitutional as confiscation without compensation; nor is the denial of such a variance an abuse of discretion.

Eminent Domain—What Constitutes "Necessity"

SOUTH CAROLINA.—*White* v *Johnson et al., Spartanburg County Highway Commission*, 146 S. E. 411.—Necessity as well as public use must exist to warrant taking of land by condemnation, "necessity" not meaning an absolute but only a reasonable necessity such as combines greatest benefit to the public with the least inconvenience and expense to the condemning party and the property owner consistent with such benefit.

The County Commissioners are therefore warranted in condemning a right-of-way 66 feet wide although the traveled highway will be only 36 feet in width, so as to secure removal of structures that obscure the view of travelers, etc.

The County Commissioners may exercise their descretion in such cases within reasonable limits.

Amendment of New York Planning Commission Law

The New York Planning Commission Law with regard to villages has been amended[1] the amendment changing the provision with regard to the membership of the planning board. The old law provided for the appointment of five members with overlapping terms, each member to serve five years. The new law provides that two of the members shall be officials of the village, and three, persons who do not hold any village office. The terms of the two officials terminate with the term of the village president.[2] The citizen members hold overlapping terms of three years each. This gives an incoming president almost complete power of appointment of the members of the board.

New City Planning Commission Laws

Modern city planning commission laws are increasing in number in this country. Such a law, modeled on the National Model Act, has been passed in North Dakota and Montana, and similar legislation is pending in other states.

[1] 1929, Ch. 60.

[2] The law states "mayor," but evidently the president of the village trustees is meant.

Recent Zoning and Planning Literature

Standardizing Zoning Symbols.—The Zoning Study Group of Los Angeles, Calif., under date of July, 1928, has reprinted in pamphlet form an article published in *City Planning* January, 1929, entitled "The Standardization of Zoning Symbols."

A Useful Report from Denver.—The Fourth Annual Report of the Board of Adjustment of Denver, containing a summary of its doings for the year ending February 11, 1929, also gives at some length a considerable number of their decisions in a form most useful to similar boards throughout the country.

Thomas Hastings on Building Heights.—Thomas Hastings, the well-known New York architect, would limit the height of buildings in that city to eight stories. This position he states and illustrates at length in the *New York Sunday World* for April 7, 1929.

(For additional articles, leaflets, etc., in this field, see page 179.)

Master Construction Glass-Overs for Sludge Beds

Overcoming Sludge Bed Objections

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THE CITY'S LEGAL RIGHTS AND DUTIES

Conducted by A. L. H. STREET, *Attorney at Law*

Ornamental Street Lighting Constitutes a "Local Improvement" for Which Special Assessments May Be Levied.—A statutory or constitutional provision empowering a city to levy special assessments for local improvements permits a levy on account of ornamental street lighting in the business district of a city, holds the Oklahoma Supreme Court in the case of Bragdon vs. City of Muskogee, 271 Pac. 1006. Following the reasoning of the Oregon Supreme Court in a similar case which arose in Astoria, the Oklahoma Court says:

"In the case at bar the assessment sought to be made and the improvement district created, is for the installation of an ornamental street-lighting system in the downtown district of the city of Muskogee. It is purely local in that it is centralized and tends solely to improve the property by lighting the same within the locality described. The use to which it is put by the public generally does not change its character as a local improvement, but the specific locality in which the improvement is placed receives an added benefit which is not common to the inhabitants of the city as a whole. It is the same theory that prevails in the construction of sewer improvements, which, by all the authorities, constitute local improvements for which special assessments may be levied. The sewer, while it is generally for the good of the entire municipality and the inhabitants thereof, yet directly it serves the property in a given locality, and to such an extent becomes a local improvement of the property within a particular sewer district.

"The courts have uniformly held that the essential element of a local improvement is that it shall benefit the property on which the costs are assessed in a manner local in its nature, and not enjoyed by property generally in the city. It is generally recognized that the repairing, regrading, and widening of a street is a local improvement. It has likewise been held that the planting of trees, shrubbery, and flowers is a local improvement."

Municipality Held Not Liable for Failure to Safeguard Against Accidents in Connection with Operation of Street Sprinkler.—The District of Columbia operated a street sprinkler for the comfort, amusement, and pleasure of the children of a community. A child playing around the sprinkler was knocked down by a passing automobile, and an attempt was made to recover damages against the District on a theory that it was negligent in failing to safeguard against such accidents. But the Court of Appeals for the District decided that there could be no recovery—that municipalities are immune from liability in such cases, on the ground of being engaged in the discharge of governmental functions. The Court observed (Tillman vs. District of Columbia, 29 Fed. 2d, 442):

"It is conceded that municipal corporations possess two kinds of powers and duties, the one being merely municipal for special local purposes and benefits, the other being of a public or governmental character for the general public welfare. 'It is established doctrine that when acting in good faith municipal corporations are not liable for the manner in which they exercise discretionary powers of a public or legislative character. A different rule generally prevails as to their private or corporate powers. . . .'

"In the instant case it appears that the sprinkler in question was voluntarily established by the District; that it was publicly maintained and operated for the comfort and pleasure of the children of the community, and served incidentally to promote the cleanliness and health of the children who made use of it; that the service was for the common good of all, and was rendered to the public without charge, and that no pecuniary profit or other special corporate advantage resulted from it, nor was any enforced contribution assessed upon individuals particularly benefited by it, by way of compensation for its use. These facts bring the case within the definition of a governmental service . . . and accordingly exempt the District from liability for the alleged negligence set out in the declaration."

City Held Bound to Make Diving Place in Park Reasonably Safe.—In a suit against a city for injury to a bather in a park, through diving from a diving board into shallow water the South Dakota Supreme Court said:

"No actual notice had ever been given to any members of the governing body of the municipality or to any of its officers that the maintenance of the diving board in the depth of water where it was placed was dangerous, but the evidence shows that the water remained at practically the same depth from the time that the pier was put in until the injury to plaintiff occurred. The city constructed and put in the pier and diving board, and therefore had notice of its position and the depth of the water, and was required to make the diving place reasonably safe for the purpose for which it was to be used." (Norberg vs. City of Watertown, 221 N. W. 700.)

The opinion cites decisions of the appellate courts of Colorado and West Virginia as supporting the conclusion reached.

Elimination of a Dangerous Grade Crossing Justified Closing Part of a Street.—In the case of People vs. City of San Rafael, 273 Pac. 138, the California District Court of Appeal upheld the action of defendant city in closing part of a street, on the ground of avoidance of a dangerous grade crossing. That the closing incidentally benefited a railroad company was found to fall short of showing that the City Council abused its powers in the matter. The Court said, in part:

"Municipal authorities may not vacate any portion of a public street for the sole benefit and use of private individuals or corporations. . . . But, on the other hand, it cannot be questioned that in a proper case a city, through its duly constituted authorities, may close and vacate a street, or a part thereof, in the interest of the safety, convenience, and good of the general public. Nor is this power affected by the fact that, as one of the incidents to its exercise, the beneficial use or title to the land abandoned may, and usually does, revert to private parties. . . .

"This power being left by the Legislature with the city, it is then, in the first instance, a matter for the city council of the city to decide whether or not the closing of a particular street, or part of a street, is in the public interest. . . . Where this discretion has been soundly exercised, based upon sufficient facts, with a proper consideration of the needs of the public, with a minimum of damage to all concerned, and with the end of securing certain real benefits for the public, courts should not and cannot interfere."

Public Service Commission's Powers as to Busses Held Not to Exclude Reasonable Regulations by Cities.—Despite the power vested in the Public Service Commission of Indiana to regulate the transportation of passengers by motor-busses, cities are left free, within reasonable limits, to restrict the routes that may be used within the municipal boundaries, holds the Indiana Supreme Court in the cases of Stuck vs. Town of Beech Grove, 163 N. E. 483, 487. The Court declares in its decision:

"Ordinances designating the streets within a municipality upon which busses may operate, or prohibiting their operation on certain streets, do not encroach upon the jurisdiction of the Public Service Commission over motor-bus common carriers, so long as the ordinances do not prevent or unreasonably interfere with the utility's operation under the certificate or franchise granted by the com-

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City Treasurer's Sureties Held Not Liable for Loss Resulting from Commissioners' Failure to Bond Depositories.—The treasurer of a Kansas city—also cashier of one of the city's depositories—solved his concern in a shortage in his accounts by committing suicide. Suits were then brought by the municipality against his official bondsmen for reimbursement against the loss. But, it appearing that the loss was due to improper disbursements by the city depositories, against which the city had not protected itself by requiring these depositories to furnish bonds, the United States District Court for the District of Kansas exonerated the treasurer's sureties. (City of Parsons vs. Fidelity & Deposit Co., 29 Fed. 2d, 417.) The outstanding parts of the Court's opinion read:

"Many Middle Western states of our country, like this state, have by their statute law abrogated the absolute liability of the treasurers of their several municipalities, and substituted for the single liability of the official of a municipality on his official bond the liability of depositories selected as by the law ordained; and, undoubtedly, for the reason the protection afforded the municipalities of the state was thought to be thus made greater, and the municipality was, as in this case, allowed to collect and receive interest on funds so deposited."

Referring to the fact that the unbonded city depositories had paid funds out on checks of the treasurer alone, without the countersignature of the city clerk required by law, the opinion notes that the deposits became the property of the banks, who thereby became indebted to the city for the amounts thereof. Therefore, if the funds were irregularly disbursed, the city might still holds the banks liable. On this phase of the case the Court says:

"Of course, so long as the money of the city was employed to discharge valid and due debts of the city in the irregular manner in which it was done in these cases, *pro tanto*, the bank as a depository would be protected, but in such a case the burden of making such proof would rest upon the depository. Now, it is true, . . . it is shown it was the treasurer of the city, Cavanaugh, who induced the city depositories to pay out its funds in a manner not authorized by the law and in a manner which did not entitle the bank as a depository to charge it against the account of the city in the bank. But . . . the money so paid out was the property of the bank and not the money or property of the city, and, if lost, it was the loss of the bank, and not the loss of the city, covered by the indemnity bonds involved in these transactions. . . .

"If the depositories . . . of the city's moneys duly deposited therein are not financially able to respond under the law, and this arises out of failure of the city commissioners to take the obligations by the law required by them to be taken from such depositories, then the loss must fall upon those who by their neglect caused the same. For such loss defendants in these cases are not liable. It would not do to permit the officials of the city to conduct the affairs of the city in such a reckless and careless manner as the record discloses in these cases, and then recover from a surety on the bonds of a treasurer of the city, who informed itself of the liability imposed on the treasurer and others in the making of the bond before entering into the contract. Such misconduct of the city officials and the depositories of the city could and would ruin any surety on official bonds without power to protect themselves."

Paving Ordinance Held Sufficiently Specific as to Material.—A taxpayer of the city of Jasper, Ala., attacked a paving assessment on the ground that the ordinance upon which the proceedings were based was fatally defective in failing to definitely describe the material to be used. Overruling this contention in the case of Stovall vs. City of Jasper, 118 So., 467, the Supreme Court of the state said:

"The approved ordinance in question was not indefinite as to material to be used, and was not of 'other approved material,' as was the ordinance considered in Garner v. Anniston, 178 Ala. 430, 59 So. 654. The instant ordinance provided that said Nineteenth Street 'shall be paved with sheet asphalt, asphaltic concrete or bitulithic pavement, together with such sidewalls, walls or curbing, drainpipes, storm inlets, manholes or other work pertaining to the satisfactory construction of said pavement'; that is, it was definite, or became effective and definite by the coming-in of the alternate bids and the selection and approval by the duly constituted authority of the city."

Traffic Ordinances Impliedly Exempt Public Employees and Officers Who Need Speed and Right-of-Way.—Said the United States Circuit Court of Appeals for the Fourth Circuit, in the case of Lilly vs. State of West Virginia, 29 Fed. 2d, 61:

"The traffic ordinances of a city prescribing who shall have the right-of-way at crossings and fixing speed limits for vehicles are ordinarily binding upon officials of the Federal Government, as upon all other citizens. . . . Such ordinances, however, are not to be construed as applying to public officials engaged in the performance of a public duty where speed and the right-of-way are a necessity. The ordinance of Huntington makes no exemption in favor of firemen going to a fire or peace officers pursuing criminals, but it certainly could not have been intended that pedestrians at street intersections should have the right-of-way over such firemen or officers, or that firemen or officers under such circumstances should be limited to a speed of 25 miles, or required to slow down at intersections so as to have their vehicles under control. Such a construction would render the ordinances void for unreasonableness in so far as they applied to firemen or officers engaged in duties in the performance of which speed is necessary; and we think that they should be construed as not applicable to such officers, either state or federal, under such circumstances."

Pedestrians May Be Given Right of Way Over Vehicles.—The following regulation adopted by the Police Commissioner of the City of New York was upheld by the Appellate Division of the New York Supreme Court in the case of Castro vs. New York Railways Corp., 231 N. Y. Supp. 649:

"Pedestrians, where no police officer is present and no traffic-light control system is in operation, shall have the right-of-way on crossings, and vehicles must slow down and stop, if necessary, to permit pedestrians on crossings to pass."

The Court said:

"It is asserted that this regulation was ineffectual and without force, because the Police Commissioner had no power to promulgate any such rule or regulation; that his power is limited to making rules and regulations in conformity with existing law. It is not contended that this regulation ran counter to any statute of the state, but it is claimed that it is opposed to the common-law rule that the rights of pedestrians and vehicles upon the streets and highways are equal, and that, for this reason, it is void. It is true that such is the rule in regard to pedestrians and vehicles in the use of public streets and highways. . . . It appears that the Police Commissioner promulgated this regulation pursuant to the provisions of the Greater New York Charter. . . . It will be noticed that the Legislature has given this power of regulation in the Greater New York Charter directly to the Police Commissioner. By the terms of the act, the Police Commissioner is authorized to make rules regulating traffic."

City May Be Enjoined from Permitting Acts Upon Playground Which Constitute a Nuisance.—Boston established a playground on which boys and young men were permitted to play baseball. Stray balls frequently broke the windows of a private garage across the street and otherwise interfered with safe and comfortable enjoyment of that property. The owner sued for damages and for an injunction against continuance of the annoyance. In the case of Hennessy vs. City of Boston, 164 N. E. 470, the Massachusetts Supreme Judicial Court allowed the injunction, but held that the city was immune from liability for damage already done. The basis of the decree for an injunction was that the repeated trespasses complained of by plaintiff constituted a nuisance.

Municipal Taxes Volutarily Paid Held Not Recoverable.—A decision of the South Carolina Supreme Court regards it as being "a well-established principle of law that one who voluntarily pays taxes to a state or one of its political subdivisions cannot recover the same, in the absence of statutory provisions specifically authorizing such recovery." (City of Columbia vs. Peurifoy, 146 S. E. 93.)

It was held that a South Carolina statute, providing for refunding of state, etc., taxes paid under protest, did not apply to municipal taxes voluntarily paid.

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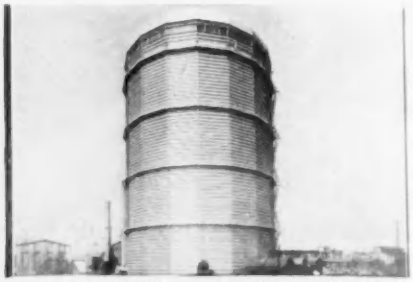

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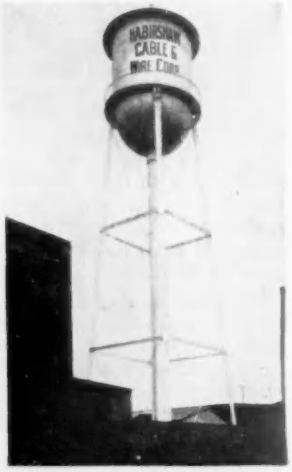

Aluminum Paint protects and beautifies this sprinkler system tank of the Habirshaw Cable & Wire Corporation, Bridgeport, Conn.

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MUNICIPAL AND CIVIC PUBLICATIONS

Orders for books reviewed in this department will be filled promptly by THE AMERICAN CITY. Pamphlets, reports and all other publications should be ordered direct from addresses given. Prices do not include postage unless so stated.

The 1929 Municipal Index.—Published by the American City Magazine Corporation, New York. 1929. 787 pp. $5.00

The sixth and largest edition of this annual publication for city officials and others concerned with the activities of municipal governments follows its established pattern in general, with various added features, the most outstanding of which is the 42-page section of "New Civic Improvements of Which American Cities Are Most Proud," wherein are illustrated and briefly described the outstanding accomplishments of 120 cities in the past year—a record of progress of great variety and interest. Another notable section of this year's volume is that dealing with water-supply, which presents a wealth of comparative statistics of the water systems in some 4,500 cities of 1,000 population or over; these statistics are prepared from new individual reports and contain notes interpreting unusual conditions. Progress in municipal government and in city planning are reviewed, as usual, by Thomas H. Reed and Frank B. Williams, respectively; there are valuable articles on traffic control (by Sidney J. Williams, National Safety Council) and on airport design (by Harry H. Blee, Department of Commerce), brief but comprehensive treatments of sewerage systems and garbage disposal, authoritative reports on traffic terminology, street lighting, etc., descriptive accounts of leading municipal power plants, and many statistical tables and directory lists of city officials. The atlas again constitutes the first section of the book, and there are many special bibliographies scattered through the succeeding sections, as has been the case before. One of the most useful features of the Index continues to be the condensed catalogs of manufacturers and dealers in municipal equipment and supplies, following the various sections for convenient reference.

Play Days for Girls and Women.—By Margaret M. Duncan, Department of Physical Education, University of Washington, assisted by Velda P. Cundiff, of the same department. A. S. Barnes and Co., New York. 1929. 89 pp. $1.60.

"The play-day type of athletic competition is an outgrowth of a search for a play contact for girls which is socially sound as well as physically wholesome. There is a higher aim than victorious teams, yet a play day retains the fun and pride of victory added to the joyousness of social play." Play days, the authors surmise in the foreword, are an outgrowth of a conference held during the 1923 meeting of the National Amateur Athletic Federation, in which a platform was drawn up, and which in turn, resulted in the adoption of independent N.A.A.F. standards for athletics for girls. Play days, immediately became popular with colleges. The Sports Days for high school girls within a radius of 300 miles of the University of Washington, first organized in 1926, have been highly productive of favorable results, and have created a demand for material, organization and development which, as here supplied, may be expected to fill a definite demand elsewhere. In addition to giving the background and general information, specific programs with details of their organization and administration, the book has a chapter on "A Seasonal Sports Play Day" and one of supplementary material including programs for a community play day, and an industrial play day. The whole is well illustrated.

Solution of the Prison Labor Problem.—An 8-page summary of notable excerpts from the Proceedings of the Governors' Conference, 1923-1928, a conference held annually for the debate of their mutual problems by governors, past governors, and governors-elect of the 48 states, and Alaska and Hawaii. (Apply to National Committee on Prisons and Prison Labor, 4 W. 57th St., New York.)

The Arithmetic of Sewage Treatment Works.—By Karl Imhoff, Chief Engineer, Ruhrverband, Essen, Germany. Translated by Gordon M. Fair, Assistant Professor of Sanitary Engineering, Harvard University, Cambridge, Mass. John Wiley & Sons, Inc., New York. 1929. VII + 99 pp. Illustrated. $2.00.

This small volume may well be considered a worth-while accessory to any present published volume on sewage treatment. It assembles in a small space the methods of computation commonly employed by sanitary engineers in the design of sewage treatment works. Statements of methods are brief and simple, and it is useful in its present translation for work throughout the North American Continent "wherever the growth of cities and industries requires the application of modern methods of sewage treatment." Its twelve chapters deal with the composition of sewage, preliminary clarification, clarification in sedimentation basins, sewage sludge, sludge digestion, types of digestion tanks, design of digestion tanks, gas collection, sludge drying and chlorination, biological processes, activated sludge tanks, sewage treatment for isolated buildings, and sample computations for sewage treatment works.

Recreative Athletics..—Prepared by Playground and Recreation Association of America. A. S. Barnes and Company, New York. 1929. 200 pp. $1.00.

This revised and much enlarged edition of a previously issued handbook is made up of suggestions for programs of recreative athletics, games, and sports; and information as to the conduct of the programs. The material offered, selected by the one organization that has the whole combined experience of the whole country in such matters to draw upon, is well organized and clearly presented, with many references to and descriptions of local activities in all parts of the country. There are chapters on: "Essential Factors"; "Methods of Conducting Athletics"; "Special Activities, Stunts, and Meets"; "Play Days"; "Track and Field Athletics"; "Water Sports"; "Winter Sports"; and "Organization and Administration." Among the appendices are a graded list of athletics appropriate for boys and girls, and a bibliography.

Los Angeles Municipal Architecture; The River of Destiny.—Two exceptionally attractive booklets issued by the Los Angeles Department of Water and Power. The former is a 30-page 10- by 12-inch publication consisting of photographs that demonstrate that "the elements of architectural character and beauty may be combined with utility, economy, and permanency." The latter (64 pp.) is a revised edition, illustrated, of the story of the Colorado River, by Don J. Kinsey, its historic and economic aspects, and the coming of the Boulder Dam project. (Apply to the Department.)

Official Guide and Directory, Sheriffs and Police Officers Association of America, 1929.—A 400-page paper-bound volume containing a classified directory of all sheriffs of the United States and all chiefs of police in cities of 5,000 and over, together with a roster of Association membership, and much information of a miscellaneous character. Designed primarily as a reference work for the desk of the law enforcement officer, and the fourth annual issue of its kind. $5.00. (Apply to 139 North Clark St., Chicago, Ill.)

Abstracts of Scientific and Technical Publications from the Massachusetts Institute of Technology.—A large number of books, pamphlets, articles in periodicals, and theses written by members of the faculty and students, in various fields of engineering, and also in biology and public health, chemistry, physics, mathematics, economics, etc., are briefly abstracted in this 43-page book. January, 1929. (Apply to the Institute, Cambridge, Mass.)

Public Health and Hygiene.—By Charles F. Bolduan, M. D., Director, Bureau of Health Education, Department of Health, City of New York. W. B. Saunders, Philadelphia and London. 1929. 312 pp.; 122 illustrations. $2.75.

A concise review of the whole field of public health, written as a text for students, especially nurses. The 40 chapters give much of the historical background of sanitary science, as well as the modern knowledge concerning the prevention of disease and the promotion of health. Though succinct, this book is packed with valuable information and presents a good perspective of the broad field of hygiene and public health. It will serve a useful purpose as an interesting introduction to the further study of a fascinating subject.

JAMES A. TOBEY.

Financing of State Highways.—Compiled by Julia E. Johnsen. The H. W. Wilson Co., New York. 1929. 209 pp. 90 cents.

This volume, which is one of the Reference Shelf Series of reprints of selected articles, briefs, bibliographies, debates, and study outlines of timely topics, is devoted primarily to the discussion of bonds for highway purposes and the pay-as-you-go policy. It includes the discussion of the sources of taxation to be drawn upon for financing, and such practice, principles and breadth of discussion as the limitation of the volume permits.

Concrete Bridges.—The Portland Cement Association, 33 W. Grand Ave., Chicago, has published an attractive and splendidly illustrated booklet on bridges, for distribution among engineers, civic and municipal officials and others interested in bridge construction. The basic requirements and how they may be met economically and efficiently, and maintenance, economy, and structural details are discussed. The illustrations show the possibilities of concrete bridges of any length, or for single spans of from 20 to 300 feet. (Apply to the Association's nearest office, or to above address.)

Prevention of Odor Nuisance in the Disposal of Creamery Wastes by the Treatment with Chlorine Preliminary to Broad Irrigation.—A pamphlet by E. A. Renke, Assistant Engineer, Bureau of Sanitary Engineering, California Department of Public Health, reprinted from the 1929 Journal of the California Sewage Works Association. 5 pages. (Apply to the author.)

Odor Control by Chlorination.—A paper by R. F. Goudey, Resident Engineer, Los Angeles, California State Department of Public Health, presented at the First Annual Meeting of the California Sewage Works Association, and reprinted from the Sewage Works Journal of January, 1929. Reference is also made to the problem of corrosion of masonry sewers and manholes by sewer gas. 10 pp. (Apply to the author.)

The Selection of Patrolmen.—In a report submitted to the Municipal Civil Service Commission, by the Municipal Research Commission of Syracuse, N. Y., complete description is given of the process of selecting patrolmen, including intelligent tests, aptitude tests, medical examinations, character investigations, etc. Appendices include "Types of Mental Tests in Various Cities," a description of the Detroit Rating Form for Patrolmen; and a Syracuse medical standards requirements form. 50 pp., multigraphed. The Municipal Administartion Service, 261 Broadway, New York, has prepared a 12-page multigraphed abstract of the report. See also p. 124 of THE AMERICAN CITY for April, for a summary. (Apply to the Research Commission for the reort, or to the Municipal Administration Service for the abstract.)

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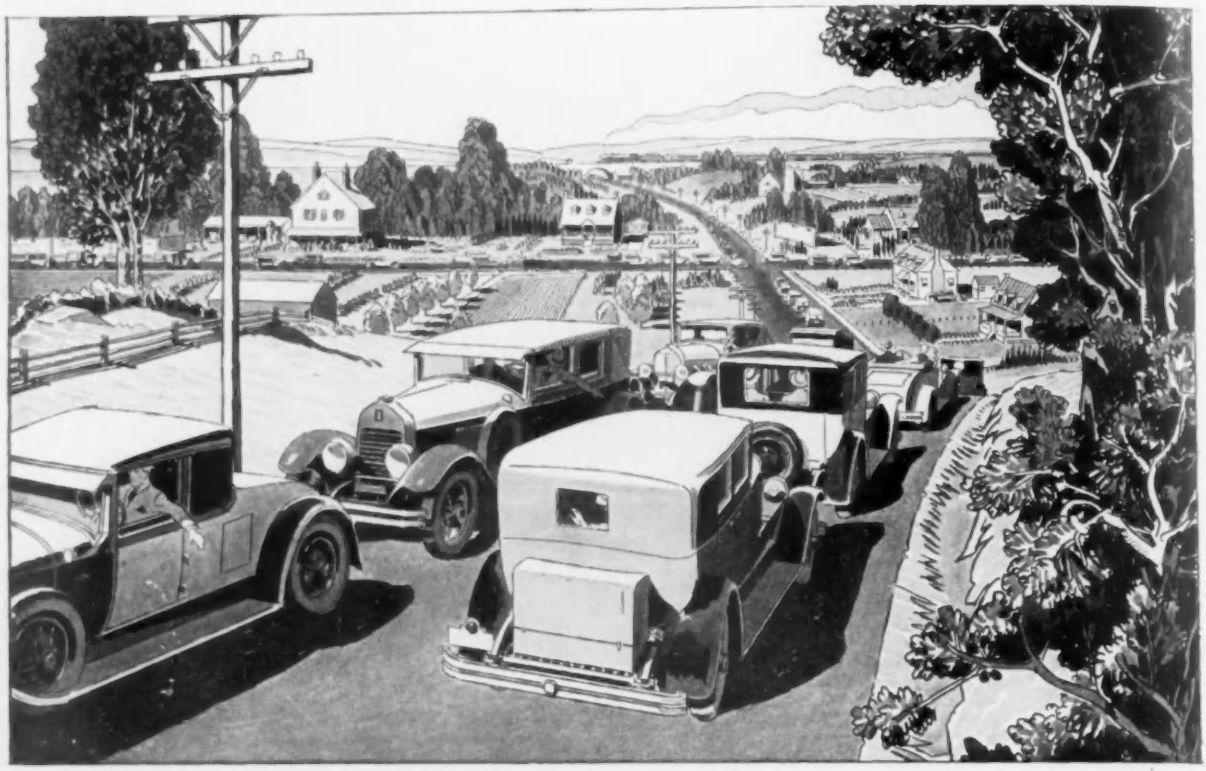

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Regional Survey of New York and Its Environs, Volume II: Population, Land Values and Government.—Regional Plan of New York and Its Environs, 130 East 22d Street, New York. 1929. 321 pp. $3.00.

This, the seventh of ten volumes of the New York Regional Survey to be completed, is one of the most fundamental, inasmuch as without the ability to predict or control the growth of population and its direction there can be no worth-while regional planning. Furthermore, land values, which are primarily determined by population growth, are inextricably bound up with planning; and they are also influenced or controlled by governmental policy and procedure. The thoroughgoing studies of past, present and future population that have been made by the Regional Plan staff and others are reported and interpreted in the first part of the volume. This is followed by the section relating to land values, which is a revision of Engineering Series Monograph No. 3, previously issued. It includes presentation and discussion of the distribution of land values, their relation to value of improvements, and the nature and effect of factors influencing them.

The third part describes the governmental and legal structure and background of the region, takes up the relation of government to planning, and includes special chapters on interstate and intermunicipal bodies, the consolidation of New York City, the relation of government to public utilities, and on public finance in connection with regional planning. The volume, as is the case with the others in the series, is attractively printed, with many tables, maps and illustrations effectively supplementing the text. It will be of great interest not only to the New York region but to metropolitan districts everywhere.

Regional Planning Notes, Los Angeles County, Calif.—A bi-weekly digest of general information on planning and allied subjects, including matters of current national news value and of local interest, in multigraphed form, variable pages, prepared by Bryant Hall, Research Engineer, Statistical Division, Regional Planning Commission, Los Angeles County. Items are arranged to be self-indexed, dated, and referenced for pasting on 4 x 6-inch filing cards. Legal restrictions limit availability of the Notes outside the county to organizations having similar publications in the field of planning to offer on exchange basis, but wider circulation is given to much of the useful material presented, by its reproduction regularly in the *California Real Estate Magazine*, in a department headed "Building Better Cities in California." (For information apply to the Commission, Hall of Records, Los Angeles, Calif.)

Zoning Facts in Los Angeles.—Zoning Facts, No. 4, of March 15, 1929, is a page leaflet compiled for the Board of City Planning Commissioners of that city by Huber Earl Smutz, Zoning Engineer. It gives a brief picture of present conditions in Los Angeles.

Results of Zoning.—Bulletin No. 1, 1929 series, National Conference on City Planning, devotes 4 of its 7 multigraphed pages to zoning in New Jersey, its discussion being based upon a review recently issued by the New Jersey State League of Municipalities, and already mentioned in these columns. "New Jersey is one of the best testing grounds for zoning in the country. Most of its 75 zoned communities have had at least five years' experience under a zoning ordinance, a state which no other state can equal . . ." It has also "run the gauntlet of unfavorable court decisions in the United States Supreme Court and has kept its zoning in spite of them." The other 3 pages of the Bulletin are devoted to State Parks and Forests, with numbers and acreages shown by states, and with a picture map of the Connecticut state parks and forests. (Apply to National Conference on City Planning, 130 E. 22nd St., New York.)

How the Planning Laws of New York Work.—Richmond Moot, of Schenectady, N. Y., has an article in the January, 1929, copy of *City Facts*, published by the Buffalo City Planning Association. In connection with an exposition of planning principles it gives many illustrations of the methods in which the recent laws of New York State for the establishment of the city plan may be employed for the public interest.

How to Abolish the Slums.—By E. D. Simon, Ex-Lord Mayor of Manchester, England. Longmans, Green & Co., New York, London, and Toronto. 1929. XII + 166 pp. $1.80.

Although over a million houses have been built in England and Wales since the war, most of them partly subsidized, Mr. Simon finds that the condition of the slums in which the poorer workers are forced to live is probably worse today than it was at the end of the war. He estimates that there are a million families in the urban districts of England and Wales who at the prevailing rate of laborers' wages cannot provide their children with the barest physical necessities, and in addition pay the rent of a standard minimum house.

For this failure of the subsidy to abolish the slums, Mr. Simon's remedy is not the abolishing of the subsidy, but (1) more economical construction; (2) a readjustment of local taxation whereby all houses in urban areas, up to and including the minimum standard of post-war houses, should be assessed at a low and uniform flat rate; (3) rent restriction on all old houses; and (4) an additional subsidy based, not on the type of house, but on the needs of the family as gaged by income and number of children.

Mr. Simon points out the fact that no one expects the working classes to pay taxes great enough to educate their children or provide the public health service which they require. He maintains that every argument for state or municipal aid that applies to the other cases applies with at least equal force to housing.

Raymond Unwin on Regional Planning.—*Planned Progress*, a paper published by the Regional Planning Federation of the Philadelphia Tri-State District, prints in its March issue an article by Raymond Unwin of London on regional planning. In the same number is a map of the Tri-State District.

Skyscraper Garages.—The Real Estate Magazine of March, 1929, published in New York City, contains an article entiled "Skyscraper Motor Car Hotel Key to Traffic Relief." The magazine is the official journal of the Real Estate Board.

In the same number is an acount of the interesting housing development on the East River, which is so rapidly transforming that part of New York City.

Report of Advisory City Planning Commission, Toronto, Ont.—The Advisory City Planning Commission of Toronto, appointed by the City Council, May 17, 1928, with Norman D. Wilson, General Director, has published and placed in the hands of the Council a report, with recommendations, for city planning improvements the completion of which fifteen years hence will create "a downtown section that in beauty and dignity, in ease of traffic flow and in business utility, will be comparable with that of any city on the continent and in keeping with the unparalleled uniqueness of Toronto's residential areas, with its waterfront development, its National Exhibition, its parks and its playgrounds." 50 pp. 9 x 11, admirably illustrated with pencil drawings and maps. (Apply to the Commission.)

Radburn Garden Homes.—Radburn, N. J., the "New Town for the Motor Age" has been devised by a distinguished group of architects and town planners, and is being built by the City Housing Corporation, which, since 1924, has devoted itself to better communities and better homes for the "average" family. Radburn is 13 miles from New York City. Its location, its safety street plan, playgrounds, and the houses and apartments, schools, stores, churches, also conditions of financing, are fully set forth in a 24-page illustrated booklet. (Apply to City Housing Corporation, 18 E. 48th St., New York.)

Location of Airport, Philadelphia, Pa., District.—"A Report with Supplements" made by Ford, Bacon and Davis, Engineers for the Joint Committee of the Chamber of Commerce and the Regional Planning Federation of Philadelphia on an air terminal survey. It covers (1) a comprehensive study of the general and technical requirements of airport facilities for the district; (2) a comparative study of the various available locations for airports; and (3) conclusions as to the most advantageous location and development. 66 pp., 9 x 12, with numerous maps and aerial photographs. (Apply to the Engineers, 39 Broadway, New York.)

Our Traffic Problem.—By Clifton R. Bechtel, Chairman, Committee on Zoning, Chicago Real Estate Board. An admirable analysis of Chicago's present-day traffic problem, and a discussion of remedies. The latter are presented for discussion under two general heads: remedies that are matters of control; and remedies calling for physical improvements. The subject of physical improvements is divided into major improvements such as street widening, the construction of elevated streets, cutting through new arterial streets where additional facilities can be obtained by no other method; constructions of under crossings for pedestrians at busy traffic intersections; traffic segregation facilities; and minor improvements such as the laying of smooth pavements, provision of easy curves at intersections, separation of grades at street intersections at points where this can be effected without undue property damage, etc. The effect of major improvements on general property value is touched upon, and account given of some of Chicago's outstanding improvement schemes of the past few years. 14 pp. 3c for postage. (Apply to Municipal Reference Library, City Hall, Chicago.)

Re-examination.—By Robbins B. Stoeckel, Commissioner, State Department of Motor Vehicles, Connecticut. Department Bulletin 61, February 9, 1929. In it, periodic tests are proposed to eliminate incapable drivers and deliberate offenders. Character tests should somehow be incorporated into such general tests, and should as nearly as is possible be made the basis of all examination and re-examination of drivers. It is made so to a great extent in Germany. In Connecticut, the Governor recommends certain reforms along this line now being studied as to practical application by the Department, and re-examination in some form is expected within the next year or so. (Apply to the Commissioner, Hartford, Conn.)

An Industrial Town; A Restaurant in the Air.—The *Bulletin of the Beaux Arts Institute of Design*, March, 1929, contains reproductions of five prize-winning designs in a competition for a complete industrial town with full facilities to accommodate 6,000 workers, and 10,000 people under modern living requirements. Transportation, civic center, business area, factory site, residential section, and park and playground requirements were major essentials for the designs. Another competition in the same issue is for the design of a restaurant in the air in a park that has no natural elevation from which one can get a view of the surrounding landscape. Thirteen medal-award designs are shown. 35c. (Apply to the Institute, 304 E. 44th St., New York.)

Put Our Town on a Pedestal: "Cleanest Town" Prizes for 1929.—The National Clean Up and Paint Up Bureau, 310 East 45th Street, New York City, has issued, among service material available upon request to municipal and civic bodies, a pamphlet of practical suggestions for organizing a clean-up campaign. It has also issued a leaflet announcement of the state prizes in the form of trophy cups to be offered again this year. Other information available on request includes official forms for mayors' proclamations, and report blanks, while a large variety of advertising display material, cartoons, newspaper headings, etc., may be had at cost. (Apply to the Bureau.)

Fire Prevention Clean-Up Campaigns.—A 4-page pamphlet issued by the National Fire Prevention Association outlines organization for a community campaign, stressing the idea that a clean house seldom burns, and also urging that beautification should be made a feature, as well as cleaning. Scope of activities, time for the campaign, the enlistment of schools in a poster and essay contest, and sources of material, are included. (Apply to the Association, 60 Batterymarch St., Boston, Mass.)

Community Fire Prevention Accomplishments.—More than 645 cities are represented in the Inter-Chamber Fire Waste Contests being conducted by the National Fire Waste Council and the Insurance Department of the Chamber of Commerce of the United States. Specific activities which have been carried on in conjunction with local fire prevention programs of chambers of commerce are reported in an 8-page bulletin designed to aid other interested local groups. (Apply to Insurance Dept., Chamber of Commerce of the U. S., Washington, D. C.)

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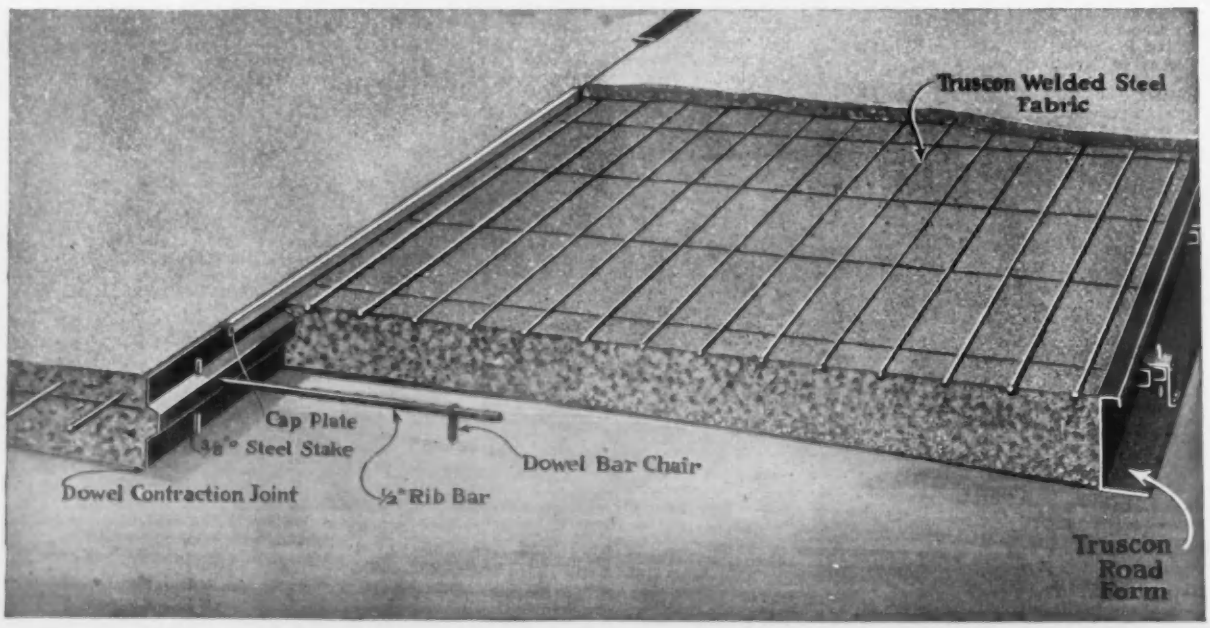

Mention THE AMERICAN CITY—it helps.

The American Year Book, 1928.—Edited by Albert Bushnell Hart and William M. Schuyler. The American Year Book Corporation, New York. 1929. 892 pp. $7.50.

The fourth of the present series of this annual publication, devoted to a composite statement of the year's progress in the arts, science, social conditions, and the humanities, in the United States. It is somewhat increased in size and in the number of contributors, nearly two hundred of the latter having cooperated with the publishers in supplying concise surveys of fields with which they are specially familiar. It continues to be a very useful compendium of this type of information, which is otherwise difficult to obtain in compact and authoritative form for a wide variety of subjects. The portions having to do particularly with cities include the divisions of Municipal Government, Public Resources and Utilities, Social Problems and Conditions, and Education, and various articles in other divisions such as those on city finance, land and property taxes, highways and motor roads, motor bus service, urban and interurban railways, public health and hygiene, and vital statistics. The *New York Times* and its publisher, Adolph S. Ochs, have again supplied financial backing for carrying out the work.

Proceedings, Second Annual Conference on Highway Transport, University of Michigan.—This conference was held at the University, October 11-13, 1928, in conjunction with the seventh annual meeting of the Michigan Motor Bus Association, all under the direction of the College of Engineering. The proceedings, published by the University as Official Publication No. 24 of Volume XXX, contain welcoming addresses, committee reports, and two papers, one on "Traffic Regulation and Control," by Hawley S. Simpson, the other on "Bus Terminals," by Clarence H. Elliott. 119 pp. (Apply to the University, Ann Arbor, Mich.)

Sewage Treatment Plant Problems.—This is Bulletin 96 of the Engineering Extension Service, Iowa State College, and contains five papers presented at the Ninth Conference on Sewage Treatment at Ames, Iowa, November 8-10, 1927. (Apply to the College, Ames, Iowa.)

Sanitary District of Chicago: Engineering Works; North Side Sewage Treatment Project; Chief Engineer's Report and Recommendations, 1928.—Three booklets. The first, of 108 pages, dated August, 1928, describes and illustrates the various engineering works completed and under construction by the Sanitary District, embracing Chicago and some 59 other municipalities. These include the various canals, sewers, pumping stations, and sewage treatment plants. The second, 50 pp., is an illustrated description of the North Side sewage treatment works, declared to be the largest and most modern of its kind, issued at the formal opening on October 3, 1928. The third, 89 pp., is an illustrated report, to the Board of Trustees, on the engineering work of last year and additional work considered necessary. (Apply to Municipal Reference Library, 1005 City Hall, Chicago, Ill. 10c, 5c and 6c postage, respectively.)

Electricity in the Home.—The City Club of New York has followed up its excellent pamphlet on "The Regulation of Electrical Utilities in New York State," mentioned in THE AMERICAN CITY for March at pp. 168 and 176, by this study of the rates for domestic use of electricity. The present rate policy and structure of electric companies in New York State are severely and searchingly criticized, and a plea made for the requirement by the Public Service Commission of rates more nearly related to cost. 46 pp. (Apply to the Club, 55 West 44th St., New York.)

Housing as Related to Tuberculosis—1915 to 1928.—A bibliography by Sarah I. Morse, designed to supplement and bring up to date Professor James Ford's reference list published in the *American Journal of Public Health* in December, 1916, under the title, "House Infection and Housing Betterment." Miss Morse's bibliography appears in the *Journal of the Outdoor Life*, published by the National Tuberculosis Association, 370 Seventh Ave., New York, April, 1929, and deals exclusively with housing as related to tuberculosis. A brief summary of each article follows the title. 25c. (Apply to the National Tuberculosis Association.)

Politics and Criminal Prosecution.—By Raymond Moley, Professor of Public Law, Columbia University. Minton, Balch and Co., New York. 1929. 241 pp. $2.50.

This is a searching and valuable study of law enforcement, on the criminal side, done with characteristic scholarliness and presented in eminently readable and even absorbing form. The public prosecutor in the United States has become a figure of great importance, largely through the decline in significance of associated officers and agencies such as the sheriff and coroner, and grand and petit juries, and through the limitations of magistrates and judges with respect to power, ability and opportunities for adequate knowledge of cases brought before them. A very important part of the prosecutor's power lies in the exercise of choice in the method and extent of handling criminal charges.

It naturally follows that the prosecutor and the administration of criminal law easily become involved in partisan politics. Professor Moley thoroughly develops the extent and significance of this fact, which has acquired special interest due to increased gravity of the crime situation and startling disclosures of the connections between the underworld and political organizations in various cities, particularly since the profits of crime have been multiplied since 20 years ago, when gang activities were related to the protection and exploitation of prostitution and small gambling, but "are now related to liquor law violation, racketeering, hijacking and a much more expensive form of gambling." The author has had many first-hand opportunities to study the subject, in crime surveys in various parts of the country, and is an outstanding authority.

The Pension Systems of the City of Detroit.—Publication No. 111, January, 1929, of the Detroit Bureau of Governmental Research, is a study which has been submitted by the Bureau to the City Controller and the Director of the Budget. It contains a complete analysis of the five pension systems of the city,—education, police, fire, general city employees, and library groups. Its recommendations include suggestions for the creation of a joint committee of employees and administrative officers for consideration of pension problems. Such a committee might properly study the possibilities of a general pension law governing all public employees among other alternatives, it is suggested. 48 pp., mimeographed, cardboard bound. 25 cents. (Apply to the Bureau, Detroit, Mich.)

Muscle Shoals and the Public Welfare.—A 45-page pamphlet published by the Committee on Living Costs of the National League of Women Voters. The author is Marguerite Owen. It is a compilation of existing material presented for the purpose of making available to League members and others a concise and reliable account of the history and problems of Muscle Shoals. 15c. (Apply to the Committee, 532 17th Street, N. W., Washington, D. C.)

An Introduction to a Study of the Regulation of Public Utilities.—The committee on living costs of the National League of Women Voters, believing that public utility regulation has an important bearing on the question of living costs and that its principles should be understood by League members, has prepared this 82-page booklet for this purpose. There is a brief statement of past and recent history affecting the question of utility regulation, followed by an outline of the agencies for regulation and the factors that enter into it, including the methods of financing, the relation of capitalization to property value, and the holding company, as well as service standards and the various familiar considerations entering into return on capital. 20c. (Apply to Committee, 532 17th Street, N. W., Washington, D. C.)

The Water Supply of Schenectady, New York.—A 35-page pamphlet containing a report of an investigation made by the Bureau of Engineering, Department of Public Works, together with conclusions reached by James H. Stoller, Ph.D., formerly Professor of Geology, Union College, Schenectady. Printed by the Schenectady Chamber of Commerce, whose Water Supply Committee has for several years been active in this project. 1929. (Apply to the Chamber.)

American Society for Municipal Improvements: Proceedings, 1928 Convention.—This volume of over 500 pages, published under date of March 1, 1929, contains the papers and discussions, committee reports, and business proceedings of the Society's 34th annual convention, held in Detroit, Mich., October 22-26, 1928. It also contains the constitution, membership roster, and a material, service and equipment directory. The 39 papers are divided into the following chapters: I, Street Paving and Street Design; II, Street Maintenance, Street Cleaning and Snow Removal; III, City Planning; IV, Street and Traffic Lighting; V, Sewerage, Sanitation and Garbage Disposal; VI, Water Works; VII, Municipal Legislation and Finance; and VIII, Miscellaneous, including airports, automobile transportation, traffic regulations, and the engineer's position in society. The committee reports include reports by the chairmen of the specifications committees on bituminous, brick, cement concrete, and stone block pavements, sewers, street-railway pavements and track construction; and there are reports from representatives in other organizations—The American Society for Testing Materials, the National Research Council, the Division of Simplified Practice of the Department of Commerce, the American Engineering Council, the Illuminating Engineering Society, and the American Standards Association. $7.50. (Apply to C. W. S. Sammelman, Secretary, 315 Commercial Bldg., St. Louis, Mo.)

Mortality Statistics: 1925; Birth, Stillbirth, and Infant Mortality Statistics: 1925.—Two volumes issued by the Bureau of the Census, Department of Commerce. Part II of the 26th annual report of mortality statistics consists of a 170-page analysis of Part I, previously published. Text and text tables. Part II of the 11th annual report on infant birth and mortality statistics is likewise made up of text and tables in elaboration of data presented in Part I. Both are issued for the first time in convenient octavo form. 25c and 15c respectively. (Apply to Government Printing Office, Washington, D. C.)

The Buffalo City Hospital.—The March, 1929, issue of the *Bulletin* issued by the Buffalo Municipal Research Bureau (28 pp.) is devoted to a review of a report on the city's hospital made to the Finance Committee of the Common Council and to the hospital's Board of Governors, by the Bureau at the invitation of the two bodies. The Bureau retained the services of Dr. Carl E. McCombs, of the National Institute of Public Administration, and of Raymond P. Van Zandt, of the Rochester Bureau of Municipal Research, to assist in the study, the immediate incentive of which was the application of the hospital for an appropriation of $1,620,497 for building additions. The matter of this appropriation is covered, with other matters in the major recommendations. (Apply to the Bureau.)

Journal of the American Association for Promoting Hygiene and Public Baths, 1929.—Vol. XI of this yearbook, dated March instead of May or June as formerly, contains as usual a large volume of permanently valuable data on swimming pool and public bath construction, sanitation, administration, etc. This includes a summary of state regulations of public baths, swimming pools, laundries or wash-houses, and comfort stations, also full text of the new Rhode Island law and a report on a Michigan Department of Health survey on swimming pools. The editor, Arthur M. Crane, presents among other material a preliminary report on a national survey undertaken by the Association of the sanitary maintenance of swimming pools. 92 pp. Annual dues in Association, including the Journal, $1. (Apply to 327 W. 25th St., Chicago, Ill.)

Proposed Tentative American Standard Abbreviations for Scientific and Engineering Terms.—Prepared by Sub-Committee on Abbreviations, Sectional Committee on Scientific and Engineering Symbols and Abbreviations. January, 1929. This proposed Standard is now being distributed in tentative form for criticism and comment. Suggestions and changes should be addressed to Preston S. Millar, Secretary of the Sectional Committee on Scientific and Engineering Symbols and Abbreviations, Electrical Testing Laboratories, 80th St. and East End Ave., New York.

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If you would like more information about proposal advertising, write for a copy of the Proposal Form drawn up by the Associated General Contractors and ask for data on Engineering News-Record's national proposal advertising service. This material will be gladly supplied without any obligation to you.

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The Business Administration of a School System.—By Ward G. Reeder, Associate Professor of School Administration, Ohio State University. Ginn and Company, Boston, Mass. 1929. 460 pp. $2.40 net.

Education is, by facts and figures, the largest business of the state and costs annually in the United States over $2,500,000,000. So large and important **an enterprise cannot** realize its potentialities unless properly organized and administered. Revenues must be procured and accounted for; teachers must be employed and regularly paid; building sites must be selected and purchased, and buildings erected, repaired, operated. Equipment, supplies, inventories—details are legion, and can only be handled in prompt, economical, and efficient manner through the establishment and operation of adequate machinery. This is school business administration.

The author discusses both the getting and spending of revenues, but, feeling that the *expenditure* side has been especially neglected, gives that predominant attention. A few of his topics are: The Functions of Business Administration in the Schools; Administrative Relationships in School Organization; Personnel of the School Business Department; Making a School Budget; School Financial Accounting; Planning and Constructing a School Building; School Architectural Service; Selecting and Purchasing School Sites; Financing Capital Outlays; Insurance; and the Administration of School Transportation.

The work is profusely illustrated with charts, tables and forms, has chapter-end bibliographies, and is in general a practical handbook for educational officials.

Unemployment and the Ways Out.—"Safety First cut down the heavy toll of industrial accidents. Compensation laws spread the loss. Another hazard—and a new slogan: Security Next." This is the theme of the whole April 1 issue of the *Survey Graphic*, which is "leveled at an old and benumbing myth in the minds of all of us" and which "seeks to help clear the way for a new working conception of much modern unemployment as a needless and controllable by-product of industrial progress." Unemployment as the President sees it; unemployment according to the United States Senate Committee on Education and Labor; according to outstanding scholars in economic research and industrial executives; the agencies, and the unemployed;—all have consideration here. Senator James Couzens, of Michigan; Dr. Isador Lubin, of the Institute of Economics of Brookings Institute; Otto Mallery; Mary Van Kleek—these are but a few of the names represented among those making important contributions. A section is devoted to progressive management looking to steady jobs in a whole group of industries. The whole is illustrated, with a group of splendidly assembled illustrations, mostly from current art exhibits, featuring Labor and the Machine. 35c. (Apply to the Survey, 112 E. 19th St., New York.)

The Criminal Court Building and Cook County Jail.—A handsome souvenir of the public inspection of the $7,500,000 criminal justice group of Cook County contains numerous photographs and floor plans as well as the complete account of the achievement of the institutions, together with something of those who made them possible. The jail, the largest in the United States, is, in the words of the Supervisor of Public Relations of Cook County, John F. Delaney, "the model from which the modern method of housing and handling men and women accused or convicted of various crimes will be derived." 12 pp. 10 x 18. (Send 5c for postage to Municipal Reference Library, 1005 City Hall, Chicago, Ill.)

Reducing Automobile Thefts.—The National Conference on Street and Highway Safety, Washington, D. C., has issued a 10-page pamphlet in brief explanation of Act 11 of the Uniform Vehicle Code, which is known as the Uniform Motor Vehicle Anti-Theft or Certificate of Title Act. Information as to the progress in anti-theft legislation in the various states and the tangible results where it is in effect is available in a companion pamphlet, which, with the complete text of the Uniform Vehicle Code, Which is known as the nance, and other descriptive and explanatory literature bearing upon these standards, may be ordered from the Conference, 1615 H Street, N. W., Washington, D. C.

Massachusetts Building Laws Manual.—Compiled and published by the Massachusetts Building Officials Conference; N. J. Dunn, Executive Secretary, Boston, Mass. First edition, 1929. 530 pp. $5.00.

The Massachusetts Building Officials Conference has performed an inestimable service to its membership and to the architectural and building industries of the Commonwealth of Massachusetts as a whole by the initiation of an annual which brings together for the first time between the covers of one volume the whole body of current information concerning state, county and municipal building regulations effective in the state.

Texts of all state laws as relating to the erection, alteration, inspection and use of buildings, together with details of the Building Conference organization and personnel, and a directory of building officials of the state, constitute Part I. Special sections in this part include garage regulations, steam boiler rules and elevator and escalator rules. Part II includes among other data synopses of building and zoning regulations of cities and towns, arranged alphabetically. There is a substantial classified directory and buyers' guide. The whole has been carefully compiled and is conveniently arranged for reference uses.

Law Observance.—Edited by W. C. Durant, Durant Award Office, 250 West 57th Street, New York. 1929. 573 pp.

This title, and likewise the subtitle, Shall the People of the United States Uphold the Constitution?, constitute a use, or abuse, of synecdoche that is quite common among believers in the 18th Amendment—the solemn assumption that the Constitution is represented primarily by that amendment, and that law observance means observance of *the* law—the Volstead Act. The book is a compilation, with a summary by W. C. Durant, of 102 plans among those submitted in the Durant Prize Contest "for the best and most practicable plan to make the 18th Amendment effective." The plans selected are restricted to those presented by present or former public officials and others who have been engaged in enforcing the prohibition laws. They include that of the winner of the $25,000 grand prize, Major Chester P. Mills, former prohibition administrator for New York City; and the list of authors is made up of 34 public officials in the service of the United States, 23 state officials, 15 county officials, and 30 town and city officials. Mr. Durant's running summary comprises 38 pages, after which the papers themselves are given, introduced by the heading, "What's the Matter with Prohibition?"—to which the word Enforcement might well have been added for greater accuracy, inasmuch as the wisdom of prohibition is not discussed, nor the widely-held belief that the 18th Amendment and the Federal enforcement acts are contrary to the spirit of the Constitution and out of harmony with American traditions of liberty and justice.

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Recommended Minimum Requirements for Plumbing.—This 1929 report of a Subcommitteen on Plumbing of the Building Code Committee. Bureau of Standards, Department of Commerce, is a revision of a report issued July, 1923, entitled "Recommended Minimum Requirements for Plumbing in Dwellings and Similar Buildings." The basic principles of the former report are retained and their application is here extended to all types of buildings. 280 pp. 35c. (Apply to Government Printing Office, Washington, D. C.)

States Laws and Local Ordinances Regulating the Street Work of Children.—A Tabular Summary of Regulations, of 30 10-x 12 pages, in two parts, of which the first is devoted to details of state laws and the second to city ordinances. Arranged by Ella Arvilla Merritt, U. S. Department of Labor, Children's Bureau, and presented as Chart 15 in a group of published studies of children and street trades. 1929. 10c. (Apply to Government Printing Office, Washington, D. C.)

The Handicapped Child.—The February, 1929, Bulletin of the Russell Sage Foundation Library (Number 93) is a 4-page selected bibliography on blind, deaf, and crippled children, and their education and training. 10c. (Apply to the Foundation, 130 East 22nd St., New York.)

New York State Tax Commission, Annual Report, 1927.—Legislative Document (1928) No. 11; apply to the Commission, Albany, N. Y. 691 pp.

This is a report of special interest and value, presenting, in addition to an abundance of detailed tax information about New York State, a thoughtful discussion of the tax situation. There is a digest of New York laws and decisions of 1927 relating to tax matters, followed by an explanation of the statistical tables that make up the bulk of the report. The last such table in the book, No. 38, is a comprehensive comparative table entitled "Status of Certain Tax Matters in the Various States"; it covers 30 pages. In the preliminary discussion referred to, the need for more uniformity in state tax laws is stressed; a study of special assessments is recommended, with the implication that they are spreading too fast and are endangering the ability-to-pay principle. Various other studies are mentioned as necessary, including the development and enforcement of a proper tax assessors' manual. A plan of attack for bringing about a standardized tax system is outlined, including suggested contents for an American Tax Book (or Encyclopedia); and hope is expressed for the success of such standardization in the not-too-distant future.

Economic Issues and Remedies in Transportation.—An 8-page leaflet by J. Rowland Bibbins, consulting engineer, dealing with the importance of speed for public transportation vehicles, the effect of traffic signal systems, and the necessity of careful study of the general traffic situation of a city in relation to public transportation. (Apply to the author, 2301 Connecticut Avenue, Washington, D. C.)

"Legal Municipals."—"An Analysis and Summary of the Provisions of the New York Banking Law Regulating the Investment of Savings Bank and Trust Funds in Municipal Obligations." An important new feature of the Law as revised in 1928 is the requirement of unlimited tax security. This applies at the present time only to certain classes of "legals" but eventually will be applicable to every municipal obligation eligible to the legal list, according to the publisher. Another innovation is the creation of a special group of so-called" "super-legal" bonds. These and other important points are clearly explained in this 16-page booklet, which gives an outline of the many provisions of the law. $1.00. (Apply to *The Bond Buyer*, 67 Pearl Street, New York.)

The Relationship of Corporations to Community Welfare Services.—By A. V. Cannon, Attorney, Chairman, Corporation Committee, Cleveland Community Fund. A 12-page pamphlet reprint of an address delivered at the New York State Regional Conference of Community Chests in which the speaker reviews the extent of corporation support to community fund maintenance and the corresponding service of community-fund-supported agencies to corporation employees. Based largely upon a Cleveland survey made in 1928. (Apply to Association of Community Chests and Councils, Graybar Building, New York.)

Other Reports Received

ALABAMA.—Annual Report, State Highway Commission, to October 1, 1928. 197 pp., 2 charts.

CINCINNATI, OHIO.—Annual Report, City Auditor. 1928. 12 pp. Apply to Municipal Reference Library, 246 City Hall.

CONNECTICUT.—Biennial Report, Commissioner of Motor Vehicles. To June 30, 1928. 42 pp.

FREDERICKSBURG, VA.—Annual Municipal Report. 1928. 60 pp.

HENNEPIN COUNTY, MINN.—Annual Report, Department of Roads and Bridges. 1928. 150 pp.

LOS ANGELES, CALIF.—Annual Message of the Mayor. 1929. 66 pp.

OGDEN CITY, UTAH.—Monthly Financial Statement of the City Corporation, February, 1929. 16 pp.

SUMMIT, N. J.—Annual Report. 1928. 50 pp.

TONAWANDA, N. Y.—Fourth Annual Report, Niagara Frontier Planning Board. 1928.

TORONTO, ONT.—Annual Report, Assessment Commissioner. 1928. 40 pp.

TORONTO, ONT.—Annual Report, Department of Street Cleaning. 1928. 62 pp.

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MAY 4.—ALBANY, N. Y.
New York State Sewage Works Association. First meeting. Secretary, Edward H. Marsh, M. D., Department of Health, Albany, N. Y.

MAY 7-9.—CAMBRIDGE, MASS.
Massachusetts Highway Association. Fifth annual Contractors' and Road Builders' Open-Air Show. Secretary, John M. McCarthy, 318 State House, Boston, Mass.

MAY 8.—NEW YORK.
National Civil Service Reform League. Annual meeting. Secretary, H. Eliot Kaplan, 8 West 40th Street, New York.

MAY 12-15.—CHICAGO, ILL.
American Community Advertising Association. Annual meeting. Secretary-Treasurer, Don E. Mowry, 301 Beaver Building, Madison, Wis.

MAY 13-14.—WAUKEGAN, ILL.
American Water Works Association, Illinois Section. Annual meeting. Secretary, Prof. M. L. Enger, University of Illinois, Urbana, Ill.

MAY 13-16.—MEMPHIS, TENN.
National Fire Protection Association. Annual meeting. Managing Director, Franklin H. Wentworth, 60 Batterymarch Street, Boston, Mass.

MAY 13-18.—WASHINGTON, D. C.
American Library Association. Annual convention. Secretary, Carl H. Milam, 86 East Randolph Street, Chicago, Ill.

MAY 15-16.—SPOKANE, WASH.
American Water Works Association—Pacific Northwest Section. Spring meeting. Secretary, Kenneth Shibley, 1005 Securities Building, Seattle, Wash.

MAY 16-17.—HOUSTON, TEXAS.
League of Texas Municipalities. Annual convention. Executive Secretary, Harvey W. Draper, 319 Kress Building, Houston, Texas.

MAY 16-18.—CLEVELAND, OHIO.
Airport Section, Aeronautical Chamber of Commerce, Airport convention. Manager, R. W. Whitney, 300 Madison Avenue, New York.

MAY 17-18.—BUFFALO, N. Y.
American Association for Promoting Hygiene and Public Baths. Annual meeting. Secretary, Miss Hildegarde M. Rosen, 136 West 91st Street, New York.

MAY 20-23.—BUFFALO, N. Y.
National Conference on City Planning. Annual conference. Secretary, Flavel Shurtleff, 130 East 22d Street, New York.

MAY 21-24.—COLUMBUS, OHIO.
National Association of Public School Business Officials. Annual convention. Secretary, John S. Mount, Inspector of Accounts, State Department of Public Instruction, Trenton, N. J.

MAY 22-24.—PHILADELPHIA, PA.
American Association of Museums. Annual meeting. Director, Laurence Vail Coleman, Smithsonian Institution, Washington, D. C.

MAY 22-24.—PHILADELPHIA, PA.
American Federation of Arts. Annual convention. Secretary, Miss Leila Mechlin, Barr Building, Farragut Square, Washington, D. C.

MAY 22-24.—WATERTOWN, WIS.
League of Wisconsin Municipalities. Annual convention. Secretary, A. E. Zander, 7 South Pinckney Street, Madison, Wis.

MAY 23.—NEW YORK.
National Board of Fire Underwriters. Annual meeting. General Manager, W. E. Mallalieu, 85 John Street, New York.

MAY 24-31.—ATLANTIC CITY, N. J.
National Tuberculosis Association. Annual meeting. Managing Director, Kendall Emerson, M. D., 370 Seventh Avenue, New York.

JUNE 3-4.—WASHINGTON, D. C.
Conference of State and Territorial Health Officers with the United States Public Health Service. Annual conference. Address: Surgeon General, U. S. Public Health Service, Treasury Department, Washington, D. C.

JUNE 3-6.—ATLANTA, GA.
International Association of Chiefs of Police. Annual convention. Secretary, George Black, Chief of Police, Wilmington, Del.

JUNE 3-6.—BUFFALO, N. Y.
National Association of Purchasing Agents. Annual convention and Inform-A-Show. Secretary, H. I. Patten, 11 Park Place, New York.

JUNE 3-7.—ATLANTIC CITY, N. J.
National Electric Light Association. Annual convention and exhibition. Secretary, A. Jackson Marshall, 420 Lexington Avenue, New York.

JUNE 4-7.—WASHINGTON, D. C.
National Conference on Weights and Measures. Annual conference. Secretary, F. S. Holbrook, Bureau of Standards, Washington, D. C.

JUNE 6.—NEW YORK.
National Automobile Chamber of Commerce. Annual meeting. General Manager, Alfred Reeves, 366 Madison Avenue, New York.

JUNE 10-11.—KEY WEST, FLA.
Florida State Commercial Secretaries Association. Annual convention. Secretary-Treasurer, Horace L. Smith, Secretary, Marion County Chamber of Commerce, Ocala, Fla.

JUNE 12.—ROCKLAND, ME.
Maine State Chamber of Commerce and Agricultural League. Joint meeting with Rockland Chamber of Commerce. Secretary-Manager, A. L. T. Cummings, 49 City Hall, Portland, Me.

JUNE 12-14.—AUSTIN, MINN.
American Water Works Association, Minnesota Section. Annual meeting. Secretary-Treasurer, Ronald M. Finch, 240 South Fourth Street, Minneapolis, Minn.

JUNE 12-14.—AUSTIN, MINN.
League of Minnesota Municipalities. Annual convention. Executive Secretary, Morris B. Lambie, Chief, Municipal Reference Bureau, University of Minnesota, Minneapolis, Minn.

JUNE 14-15.—MARBLEHEAD, MASS.
New England Association of Commercial Executives. Annual meeting. Secretary-Treasurer, H. A. Folsom, Box 631, Newburyport, Mass.

JUNE 18-20.—BINGHAMTON, N. Y.
New York State Conference of Mayors and Other Municipal Officials. Annual meeting. Secretary, William P. Capes, City Hall, Albany, N.Y.

JUNE 24.—ON BOARD THE S. S. ST. LAWRENCE.
Union of the Municipalities of the Province of Quebec. Annual convention. Secretary-Treasurer, T. D. Bouchard, 132 Rue St. Jacques, Montreal, Que.

JUNE 24, WEEK BEGINNING.—TORONTO, ONT.
American Water Works Association. Annual convention. Secretary, Beekman C. Little, 29 West 39th Street, New York.

JUNE 24-29.—BOSTON, MASS.
National Association of Real Estate Boards. Annual convention. Executive Secretary, Herbert U. Nelson, Straus Building, Chicago, Ill.

JUNE 25-27.—CHICAGO, ILL.
International Association of Comptrollers and Accounting Officers. Annual convention. Secretary, Clifford E. Cook, City Auditor, Springfield, Mass.

JUNE 25-27.—NEW HAVEN, CONN.
New England Association of Fire Chiefs. Annual convention. Secretary, Chief John W. O'Hearn, Watertown, Mass.

JUNE 26-28.—CLEVELAND, OHIO.
American Society of Landscape Architects. Annual meeting. Executive Secretary, Bradford Williams, 9 Park Street, Boston, Mass.

JUNE 26-JULY 3.—SAN FRANCISCO, CALIF.
Association of Community Chests and Councils. Annual meeting. Executive-Director, Allen T. Burns, Graybar Building, 43d Street and Lexington Avenue, New York.

JUNE 26-JULY 3.—SAN FRANCISCO, CALIF.
National Conference of Social Work. Annual conference. General Secretary, Howard R. Knight, 277 East Long Street, Columbus, Ohio.

JUNE 27-28.—BUFFALO, N. Y.
American Automobile Association. Annual meeting. General Manager, Ernest N. Smith, Pennsylvania Avenue at 17th Street, Washington, D. C.

JUNE 28.—JULY 4.—ATLANTA, GA.
National Education Association of the United States. Annual meeting. Secretary, J. W. Crabtree, 1201 16th Street, N. W., Washington, D. C.

JULY 8-13.—AMSTERDAM, HOLLAND.
International Chamber of Commerce. Congress. Manager, American Section, John P. Gregg, Connecticut Ave. and H. St., N. W., Washington, D.C.

JULY 10-12.—MILWAUKEE, WIS.
American Society of Civil Engineers. Annual convention. Secretary, George T. Seabury, 33 West 39th Street, New York.

JULY 14-20.—PALO ALTO, CALIF.
Western School for Commercial Secretaries. Annual session. Manager, Roy W. Smith, Palo Alto.

AUGUST 4-17.—EVANSTON, ILL.
National School for Commercial and Trade Organization Executives. Annual session. Secretary-Treasurer, John N. Van der Vries, 134 North LaSalle Street, Chicago, Ill.

AUGUST 25-27.—MEXICO CITY, MEXICO.
American Association of Engineers. Annual convention. Secretary, M. E. McIver, Willoughby Tower, Michigan Boulevard at Madison Street, Chicago, Ill.

SEPTEMBER 12-19.—ROME, ITALY.
International Federation for Housing and Town Planning. Congress. Organizing Secretary, H. Chapman, 25 Bedford Row, London, W. C. 1, England.

SEPTEMBER 17-20.—PORTLAND, ME.
New England Water Works Association. Annual convention. Secretary, Frank J. Gifford, 715 Tremont Temple, Boston, Mass.

SEPTEMBER 30-OCTOBER 4.—CHICAGO, ILL.
National Safety Council. Annual safety congress. Managing Director, W. H. Cameron, 108 East Ohio Street, Chicago, Ill.

SEPTEMBER 30, WEEK OF.—MINNEAPOLIS, MINN.
American Public Health Association. Annual meeting. Executive Secretary, Homer N. Calver, 370 Seventh Avenue, New York.

OCTOBER 14-16.—JACKSONVILLE, FLA.
International Association of Street Sanitation Officials. Annual convention. Secretary, A. M. Anderson, 100 North LaSalle Street, Chicago, Ill.

OCTOBER 14-16.—TULSA, OKLA.
Southwest Water Works Association. Annual convention. Secretary, Lewis A. Quigley, Fort Worth, Texas.

OCTOBER 14-18.—PHILADELPHIA, PA.
American Society for Municipal Improvements. Annual convention. Address: E. A. Wood, City Engineer, Dallas, Texas.

OCTOBER 14-19.—LOUISVILLE, KY.
Playground and Recreation Association of America. Annual convention. Secretary, Howard S. Braucher, 315 Fourth Avenue, New York.

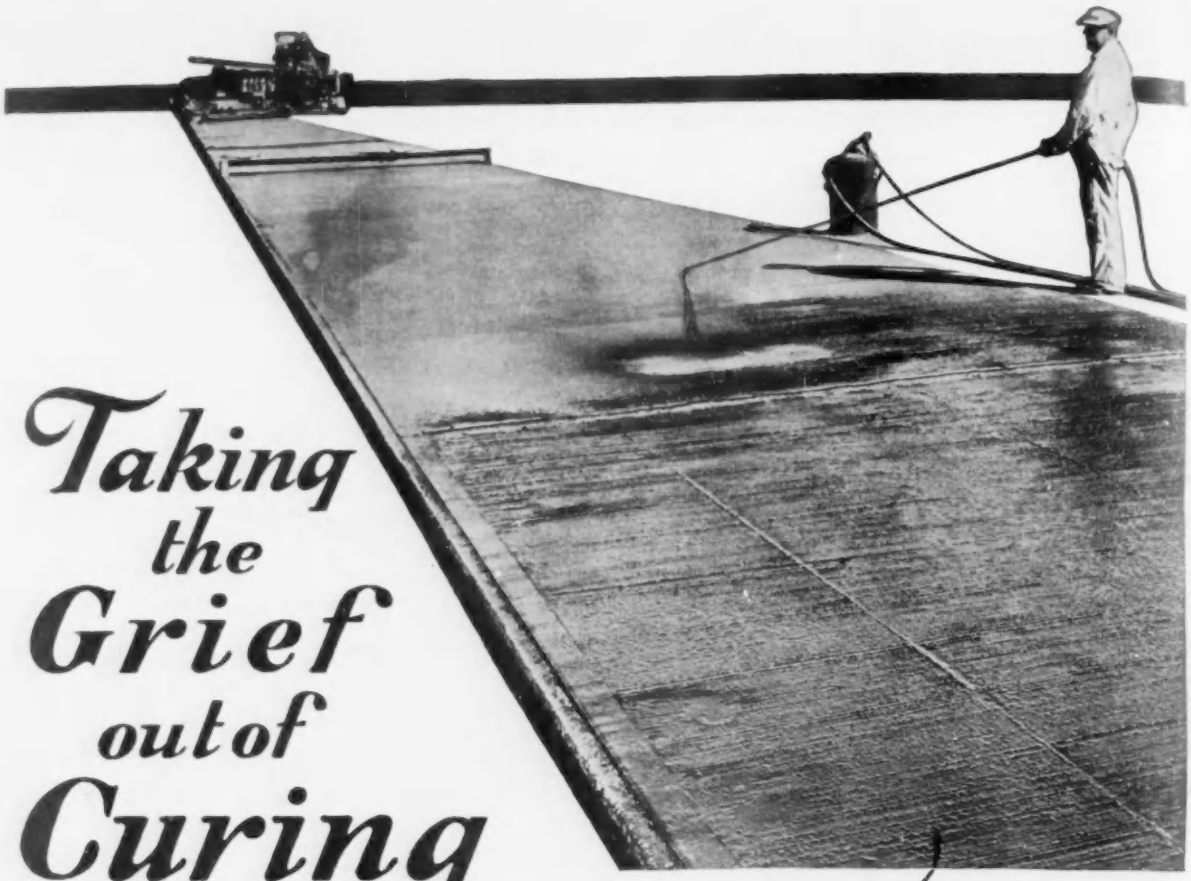
OCTOBER 20-23.—MILWAUKEE, WIS.
National Association of Commercial Organization Secretaries. Annual convention. Secretary-Treasurer, S. V. Saxby, Chamber of Commerce, Duluth, Minn.

OCTOBER 22-25.—BIRMINGHAM, ALA.
International Association of Fire Chiefs. Annual convention. Secretary, James J. Mulcahey, Fire Chief, Yonkers, N. Y.

NOVEMBER 12-14.—CHICAGO, ILL.
National Municipal League. Annual convention. Secretary, Russell Forbes, 261 Broadway, New York.

NOVEMBER 18-21.—MIAMI, FLA.
American Institute of Park Executives and American Park Society. Annual convention. Executive Sec'y, Wm. H. Walker, South Bend, Ind.

NOVEMBER 20-23.—FORT WORTH, TEXAS.
International City Managers' Association. Annual convention. Executive Secretary, John G. Stutz, Lawrence, Kans.



Taking the Grief out of Curing

Using "Hunt Process" on a portion of Brunswick Pike, Monmouth Jct., N. J.

CURING is no longer a problem when you use the "Hunt Process"! The bugbear of the paving job disappears—the road is opened sooner—your equipment is on the way to the next job 60 minutes after you pour the last batch. And when final inspection is made, the concrete will be even stronger than if you had used the old-fashioned "dirt and water" cure.

Property owners—residents and merchants favor the "Hunt Process" of curing concrete. In many places they demand it! Eliminates the unsightly mess of the dirt and water cure—prevents the dust-damaged merchandise evil—shortens the detour period. At the end of the curing period the job can be immediately accepted and road opened to traffic.

On the Pacific Coast and in the Southwest, the "Hunt Process" is now an established practice in practically every city—the sole method of cure in many places. Extensive use has proven the greater strength and resistance to wear it gives to concrete. The biggest contractors use it to increase their profits.

Each day brings new and favorable reports of the acceptance of the "Hunt Process" in many parts of the world! Used on more than 425 jobs from Washington, D. C., to Hawaii—also in Spain—and not a single failure. A request on your letterhead will bring a copy of our booklet, "Curing Concrete Without Dirt or Water by the Hunt Process."

McEVERLAST, INC.

[T.M.REG.]

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NEWS AND ILLUSTRATIONS

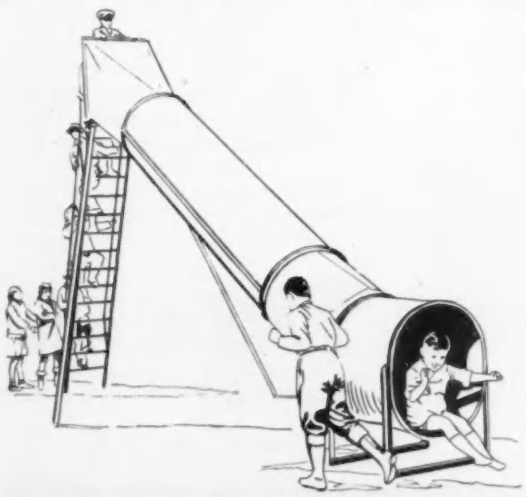
Items *of* Interest *to* City, Town *and* County Officials, *and* Others Concerned *with the* Economical Construction *and* Efficient Operation *of* Public Improvement Undertakings

The Thrills of a Tunnel on a Playground

A tunnel slide for playgrounds, in which youngsters can shoot through the semi-darkness safely, has been developed by the Hill-Standard Co., Anderson, Ind. This slide measures 22 feet in height over all, the chute itself measuring 20 feet. The tube chute measures 34 inches in diameter and is made of Armco iron. Every means of precaution known to modern mechanics has been employed to eliminate any possible chance for injury due to rivet heads, joints or connections. In addition, the chute is throughly ironed with channel and angle irons, which insure the utmost rigidity and eliminates vibration and the consequent noise.

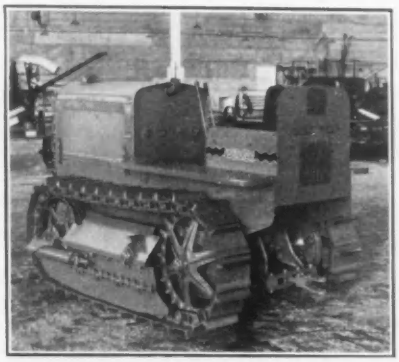
The chute is demountable, as is customary with all Hill-Standard playground equipment, and the stairway and supports are permanently set in concrete, following regular practice.

The chute is an all-steel job and all hot galvanized, and with only reasonable care on the part of park attendants it should satisfactorily serve its purpose for many years. This type of slide makes a particularly strong appeal to the children because of the tunnel feature. In a recent test conducted when an open type chute slide was placed alongside the new tunnel slide, the latter proved far more popular because of the sensation or thrill the children enjoyed while sliding through the tube. From another standpoint, this is possibly the safest playground device that has been devised, as it is impossible for the children to fall off the chute and they are given as much protection as is possible from a piece of playground apparatus.



THE NEW HILL-STANDARD TUNNEL SLIDE

This is not a radically new development, for similar slides have been used for a good many years as fire-escapes throughout the country, and it is this feature that suggested the playground slide. Having made experiments and conducted many tests over a period of several months and made the necessary mechanical changes, the Hill-Standard Co. has added this item to its playground apparatus.



THE NEW CATERPILLAR FIFTEEN

A New and Smaller Crawler Tractor

It was only a short time ago that the Caterpillar Tractor Co., San Leandro, Calif., and Peoria, Ill., announced the Caterpillar Ten. Now it announces the Caterpillar Fifteen as ready for delivery. This machine completes the Caterpillar line of small tractors, giving the contractor three sizes, aimed to fill his needs for a track-type tractor.

From the engineering standpoint, the Fifteen is a duplicate of the Ten, which has just gone into production at the new Peoria factory. The Fifteen is just a little bigger than the Ten in size and power. It is reported that when the Ten, Fifteen and Twenty were lined up in order at the recent Peoria Caterpillar convention for the observation, the observers were struck with the symmetry of these three products.

New Calcium Chloride Sales Organization

The Columbia Products Co., Barberton, Ohio, has been formed as the selling organization for calcium chloride, plant lime, etc., manufactured by the Columbia Chemical Division, Pittsburgh Plate Glass Co. Officers of the Columbia Products Co. are all executives of the Columbia Chemical Division. The new arrangement offers the advantage of more direct relationship with customers and also the services of the up-to-date laboratories and research department at Barberton.

Clark Appointed Southwestern Manager

The Portland Cement Association, 33 West Grand Avenue, Chicago, Ill., has announced the appointment of Charles A. Clark as Manager of the Southwestern offices of the Association, with headquarters at Kansas City. Mr. Clark has been with the Association since 1917. After a period of administrative work in the Chicago general office, he was assigned to Dallas as District Engineer. In assuming his enlarged work at the Kansas City office, he will have supervision over the territory comprising Texas, Oklahoma, Kansas, Nebraska and western Missouri, succeeding Forest Kaufman, resigned.

Traffic Line Marker Improved

A little over a year ago Littleford Bros., 500 East Pearl Street, Cincinnati, Ohio, announced its Traf-O-Mark traffic line marker for city streets, after four years of careful testing. The 1929 model, which has recently been announced, has several worth-while improvements. There is an all-metal flexible pipe line from the paint container to the pump in place of the rubber supply line, a new valve control which makes possible a variation in the amount of paint applied, and a raised paint reservoir giving additional pressure to the pump. The pipe line and pump can be easily and quickly removed, placed in a can of gasoline and thoroughly cleaned.

The Traf-O-Mark consists of a front marking unit, and a rear truck unit. There is a hinging action between these two units, the purpose of which is to allow the marking unit to follow the irregularities of the road surface. It also serves to keep the pressure on the marking roller constant, regardless of the quantity of paint in the machine. The marking roller or wheel is made of sponge rubber which is held firmly and protected by a strong, absorbent canvas jacket. This construction offers a firm, spongy surface to the road. The weight of the marking unit causes the roller to make its contact. On the left side of the machine is a small gear pump which regulates the flow of paint with the speed of the machine. When the machine stops, the paint stops. The machine can be equipped with 4-, 5- or 6-inch interchangeable marking rollers. The only adjustment on

3 Big Steps *Forward* in MUNICIPAL HAULAGE

A REAL WORK TEST —*final proof!*

This offers you a truck to test at our expense—without obligation to you. Put the truck into your work. Find out if it does increase work-capacity and work-speed. Get figures on time and costs—from actual operation. In short, *prove* or *dis*prove every statement made. (In states where such tests are unlawful this offer cannot, of course, apply.) The complete line of GENERAL MOTORS TRUCKS includes:

LIGHT DUTY — **PONTIAC**-powered models with 7 different basic STRAIGHT RATING CAPACITIES—3,800 to 8,000 lbs. $625 to $1085.

MEDIUM and HEAVIER DUTY—**BUICK**-powered models with 33 different basic STRAIGHT RATING CAPACITIES—8,000 to 18,000 lbs. $1395 to $3315.

HEAVIEST DUTY—**BIG BRUTE**-powered—2 models—STRAIGHT RATING CAPACITY—28,000 lbs. $4250 and $4350.

(Above prices, chassis only, F. O. B. Pontiac, Michigan)

The GENERAL MOTORS TRUCK illustrated here is a **BIG BRUTE**-powered model in the service of the City of Pontiac, Mich.

1 Powered by the PONTIAC, BUICK and BIG BRUTE engines—GENERAL MOTORS TRUCKS have brought new work-capacity and work-speed to all municipal haulage and transportation. Smooth speed under load that eats up the miles in distance hauling. Real flexibility and 4-wheel brakes to meet the demands of city traffic.

2 Inbuilt quality in every detail of construction brings low operating costs; stamina that spreads the cost-price over *years* of service—the result of unusual facilities for development and research (General Motors great Proving Grounds and General Motors Research Laboratories, for example).

3 The modern appearance of these trucks will bespeak a progressive Administration—will worthily represent your city.

(Time payments financed through Y. M. A. C. plan at lowest available rates.)

GENERAL MOTORS TRUCKS

GENERAL MOTORS TRUCK COMPANY
Pontiac, Michigan

Factory branches, distributors, dealers, in 1500 principal cities and towns

ALWAYS INVESTIGATE WHAT GENERAL MOTORS HAS BEFORE YOU BUY

THE NEW LITTLEFORD TRAF-O-MARK MACHINE FOR MARKING TRAFFIC LINES ON PAVEMENTS

the machine is a control lever to regulate the flow of paint to the roller fitted on the machine. When the lever is properly adjusted, the marking roller receives the proper amount of paint at any speed at which the operator may push it. A grooved distributing roller properly spreads the paint over the surface of the marking roller. The surface of the road receives a firm, even line, no matter what make of traffic paint is used, providing the consistency is not changed.

The brush in front of the marking roller is geared to it and revolves in the opposite direction. All pebbles and particles of dirt and dust are thus removed from the path of the machine. The white bristles in the center of the brush help the operator to follow a marked line or an old mark.

Because of the close proximity of the marking roller and the rear wheels, any desired curve can be made easily. If a very sharp curve or an arrow head at the end of the line is to be made, the rear wheels can be lifted off the ground and the machine used wheelbarrow fashion.

The only precaution necessary to keep the Traf-O-Mark operating satisfactorily is to see that it is cleaned when it is to stand idle for several hours or after the day's work is finished. This is done by removing the flexible pipe line and the pressure pump and placing them in a can of gasoline, and also cleaning the roller with gasoline. The whole operation requires but a few minutes.

A Concrete Beam Testing Machine

It is absolutely essential that municipalities and counties know the strength of concrete that is going into their roads and buildings. The simplest tests are made with beams cast from the batches on the road or on the building site. The Tinius Olsen Testing Machine Co., 500 North 12th Street, Philadelphia, Pa., has developed a new concrete beam testing machine which will make tests on beams 6 x 6 inches in section by approximately 36 inches in length.

The beam is tested in the new Olsen machine in the form of a cantilever, which offers equipment that can be obtained at a comparatively low cost and which may be used on the job on specimens that are made where the cement or concrete is being used. The load is applied at either 10 inches or 12 inches from the point of support as desired. The horizontal hand wheel is turned until rupture occurs, when the maximum load is indicated by a pointer on the dial. The maximum load that can be indicated, or the capacity of the testing machine, is 1,000 pounds.

Stops are provided to protect the instrument at the rupture point of the specimen and every possible point covered whereby this equipment will give ample service under the hard conditions under which it is bound to be used in the field. To facilitate the use of the machine in the field, it is also mounted on wheels, which makes it very convenient to move from place to place. The machine is 5 feet 8 inches long, 2 feet 1 inch wide, and 2 feet 10 inches high, and weighs 450 pounds.

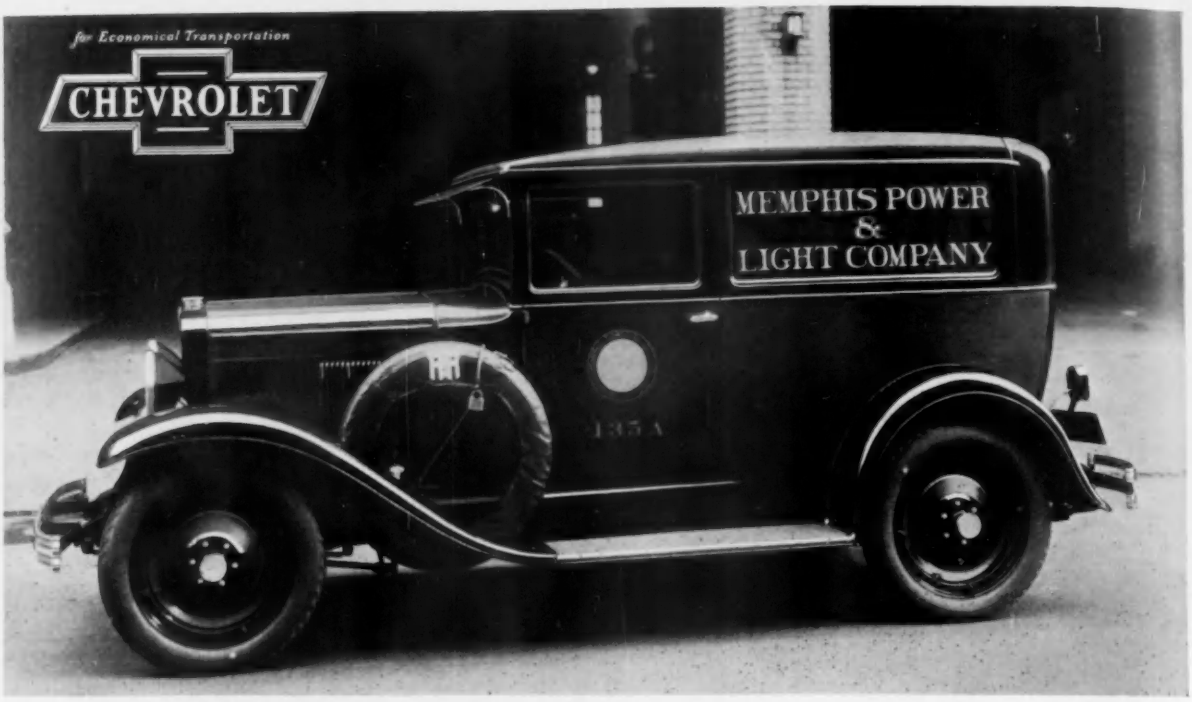
Manually Operated Fire-Alarm Systems for Schools

A manual fire-alarm system which fills a long-felt need for city officials who previously have been forced to rather crude and naturally expensive fire-alarm installations, has been developed by the Thomas-Smith Co., Canton, Ohio. The neatness in construction and manufacture of this system is outstanding. The system is shipped complete, with an erection blueprint, ready for installation. The supports are adjustable to take care of uneven walls or misalignment of succeeding floors. The floor tubes, which are flexible to allow for floors of uneven thickness, extend up from the floor and prevent the rod from being bent.

The spring is totally enclosed and positive in action. All supports and tubes are bushed with brass, and the enamel surfacing is baked on, in red, black or buff. The handles of the polished brass are lacquered. The operating rods of steel tubes with chain stem are properly proportioned to increase the effectiveness of the system.

The accompanying diagram shows one of these installations operated from the first floor and giving a bell alarm not only on that floor but on the two floors above.

THE NEW OLSEN PORTABLE CONCRETE BEAM TESTING MACHINE



ALL THE ADVANTAGES OF SIX-CYLINDER PERFORMANCE — *in the price range of the four!*

Powered by a great six-cylinder valve-in-head motor — whose smooth, powerful, economical operation has set a new standard for performance in the low-price field—the new six-cylinder Chevrolet trucks are sweeping on to the greatest popularity in the history of the commercial car industry.

Never before has a low-priced truck so admirably met the modern demands of busine s transportation. A power increase of 32% results in swifter acceleration and higher speed—with extraordinary flexibility in traffic Big, quiet, non-locking four wheel brakes give a measure of braking control in excess of the severest requirements. And a full ball bearing steering mechanism reduces driving fatigue to the very minimum.

But most remarkable of all—this amazing six-cylinder performance is actually available in *the price range and with the economy of the four!*

Consult your Chevrolet dealer today about your transportation requirements. You will find exactly the truck you need—and it will do your work with amazing efficiency and economy.

Sedan Delivery
$595
Light Delivery Chassis
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1½ Ton Chassis
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1½ Ton Chassis with Cab
$650

All prices f. o. b. factory Flint, Michigan

COMPARE the delivered price as well as the list price in considering automobile values. Chevrolet's delivered prices include only reasonable charges for delivery and financing.

CHEVROLET MOTOR COMPANY, DETROIT, MICHIGAN
Division of General Motors Corporation

A SIX IN THE PRICE RANGE OF THE FOUR!

A 15-YARD COLLECTION TRUCK RECENTLY INSTALLED BY THE CITY OF BOSTON FOR HANDLING GARBAGE AND REFUSE

This is an entirely enclosed steel body with an automatic lift and dumping equipment made by B. Nicoll & Co., New York. The body is easily and quickly loaded by one man without undue strain. It is stated that this truck does not distribute garbage, dust, ashes and papers along the streets or trail vile odors

A Heavy-Duty One-Man Patrol

Economy is becoming an increasingly important factor in the selection of highway and construction equipment and today highway officials and contractors realize that real economy means the purchase of a machine that is adaptable to many kinds of work and that can be used throughout the year. The Model DH Trackson-McCormick-Deering tractor unit with Gilbert grader, made by the Gilbert Manufacturing Co., Stillwater, Minn., is a new combination in the form of a heavy-duty one-man patrol which provides a crawler tractor quickly available for other kinds of work. The speed and simplicity of either mounting or detaching the grader are important advantages of this unit. There are no special parts necessary for its installation, and it is said to be about a 4-minute job to remove the grader from the tractor, leaving a complete crawler-equipped powerplant which is adaptable to a large variety of jobs.

With the unit assembled, the grader is ready for road work, snow removal and general grading operations.

Motor Control for Water-Works Valves

A reversible motor-driven reduction gear valve controller with a mechanical power switch mechanism to limit the torque and travel of a slow-speed shaft in both directions, has been developed by the Limitorque Corporation, 17 East 45th Street, New York. The power for the operation of the Limitorque machine may be electricity or compressed air and may be controlled remotely. This machine is directly applicable to the operation of gate and globe valves and sluice-gates, and is easily applied to existing valves.

The Limitorque machine is said to be entirely new in principle and design, and of great simplicity, and the manufacturer claims nine advantages, as follows: (1) It operates through one pair of heavy, grease-lubricated worm gears instead of a multiplicity of spur and worm gears running in an oil-tight casing. (2) Other mechanisms stop the valve by means of a limit switch geared to the valve stem, which necessitates skillful setting to prevent breaking the valve. The Limitorque machine has a torque switch which stops the valve gate only when it is properly seated, regardless of travel, and also stops when the gate meets with an undue overload during travel. (3) It has less than half the number of parts that are contained in any other unit type of control. (4) It contains no electro-magnetic coils, clutches or declutching devices and no travelling limit nor limit gears. (5) The valve gate may be closed to any desired degree of tightness. (6) All seating and unseating strains are absorbed by a powerful compression spring. (7) The positive unseating blow is administered at slow speed directly to the stem nut. (8) It has an adjustable positive acting mechanical power overload. (9) The motor is of the standard stock design of slow speed and polyphase for alternating current.

THE GILBERT ONE-MAN GRADER, FROM WHICH THE McCORMICK-DEERING TRACKSON TRACTOR IS READILY REMOVABLE FOR OTHER PURPOSES

A New Combination Chlorinator and Scales

In order to save floor space and to insure the availability of the platform scales at the chlorinator to check the weight of chlorine cylinders at all times, the Paradon Manufacturing Co., Arlington, N. J., has developed a new combination chlorinator-platform scale, known as its Model DBP chlorinating scales, for standard water-works installations.

The complete chlorinator is directly mounted on a standard platform scale. The unit is designed so that all parts of the combined chlorinator-scale are interchangeable with the parts of the regular chlorinator without the scale mounting, so that existing chlorinator installations may readily be converted to the new chlorinating scale type. This is of advantage to water-works operators who now are using an inconvenient scale with a regular chlorinator.

THE NEW PARADON COMBINATION SCALE AND CHLORINATOR

The use of the platform scale in connection with a chlorinating installation has become standard practice among engineers and sanitarians. The cost of the new chlorinating scales using a standard platform scale is no more than the cost of a chlorinator and scale separately.

The *Good Roads* Machinery Co. Inc.

Widening a rural road. A heavy bank cut is "all in the day's work" for this "AUTOGRADER."

GREATER ACCOMPLISHMENTS AT LESS COST BY NEWER METHODS—*therefore*

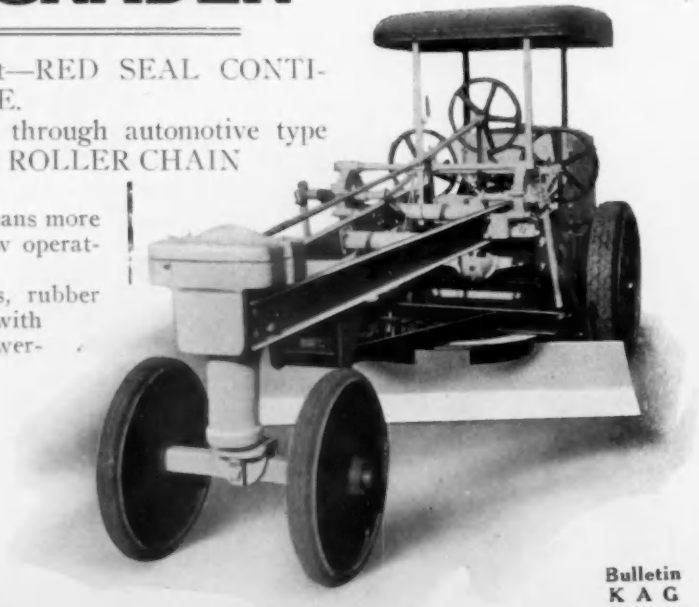
The "AUTOGRADER"

A self-contained power unit—RED SEAL CONTINENTAL GASOLINE ENGINE.

Power and speed reductions through automotive type differential and final DIAMOND ROLLER CHAIN DRIVE.

Self-starter. Ease of operation—means more efficiency of the human element—low operating and maintenance cost.

Furnished with steel disc wheels, rubber tires or steel tires with cleats, or with crawler treads. With or without powerful scarifiers.



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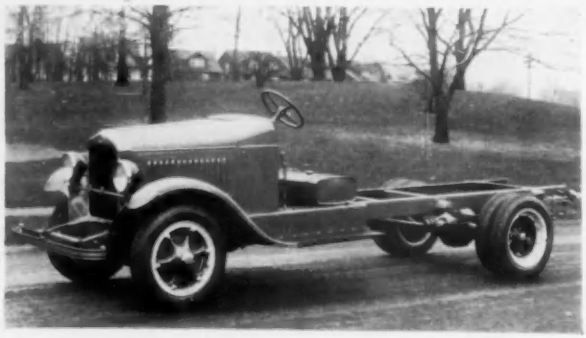
DISTRIBUTORS IN PRINCIPAL WESTERN CITIES

Good Roads MACHINERY



THE CHASSIS OF THE NEW WHITE 6-CYLINDER MODEL 61 LIGHT-DUTY TRUCK

A New Six-Cylinder Light-Duty Truck

Equipped with a seven-bearing crankshaft engine, four-speed transmission and four-wheel hydraulic brakes, a new six-cylinder light-duty truck has been announced by the White Co., Cleveland, Ohio. The new truck has an allowable gross weight rating of 8,000 to 10,500 pounds.

The new chassis, known as Model 61, will be available in 148- and 170-inch wheel-bases. Easy steering and control combine with the four-wheel hydraulic brakes to insure complete safety in traveling under all city or inter-city operating conditions. The engine, clutch and transmission are built in a unit, and the crankshaft is dynamically and statically balanced. All the valves are on the right side of the L-head engine with removable cylinder, and all combustion chambers fully machined. Double Invar strut aluminum alloy pistons are used. A compound jet carburetor and spot manifold are designed to give good carburetion at all speeds.

The crankcase breather exhausts around the carburetor intake, allowing the combustible content to be burned with the gas, and fumes to be exhausted. This adds to driver comfort and to cleanliness of the power-plant. The distributor, which operates with battery ignition, is mounted on top of the engine block, and driven from the oil pump of the pressure system. The dual rear wheels are driven through a sturdy semi-floating rear axle on roller bearings, and the large frame section is built with heavy cross members, giving the chassis adequate capacity for its rating.

A New Straight-Line Water-Meter Yoke

A new yoke, intended primarily for water-meter installations where pipe and meter are set in a straight line through the meter-box, has been developed by the Ford Meter Box Co., Wabash, Ind. Settings of this type are standard practice in the South and West where the climate is sufficiently mild and surface lines are shallow. It is also well adapted for basement installations.

A water meter set in such a line with an ordinary coupling is difficult to remove and replace, as the gasket space is nearly always wrong and the coupling nuts can hardly stretch the pipe to pull the coupling face tight against the meter gasket. The new Ford straight-line yoke provides a strong spacer piece or yoke which becomes part of the straight run of pipe and also provides an expansion connection which screws onto the meter and then expands outward against the gasket on the yoke saddles to make tight joints. To remove the meter, the connection is contracted and the meter lifted out. The pipes never move, and the spacing and alignment are permanently fixed.

According to the manufacturer, the straight-line yoke costs but little more than the couplings and fittings it replaces, and it has many advantages. It is made with or without a union for old or new services and for ⅝-inch, ¾-inch and 1-inch meters.

Premolded Joint Companies in Agreement

Philip Carey Manufacturing Co., Cincinnati, Ohio, has announced that on December 12, 1928, all differences between its company and Servicised Products Corporation, Chicago, Ill., were terminated, including the then pending litigation. As of that date, the Servicised Products Corporation was granted and is now manufacturing premolded products under a license on patents owned by the Philip Carey Manufacturing Co., including in addition to patents formerly owned by that company, all patents heretofore owned by the Servicised Laboratories, Inc., relating to premolded products, such as expansion joints, rail fillers, track pavements, railroad crossings, construction materials and other like products. Other than this arrangement, the two companies are entirely distinct and independent corporations.

Election of Diesel Engine Company Officials

At a meeting of the Board of Directors of the Busch-Sulzer Bros.-Diesel Engine Co., St. Louis, Mo., held the last of March, the following officers were elected: August A. Busch, Chairman of the Board; Edward B. Pollister, President, succeeding August A. Busch; C. Drummond Jones, formerly Fourth Vice-President, elected Second Vice-President, succeeding Mr. Pollister. Mr. Pollister continues to act as General Manager and Mr. Jones as Secretary and Treasurer.

New P. T. L. Officers

The Pittsburgh Testing Laboratory, inspecting engineers and chemists, Pittsburgh, Pa., has elected B. H. Witherspoon as President and A. R. Ellis as Vice-President in charge of operations. Mr. Witherspoon was formerly District Manager of the Remington-Rand Business Service, Inc., of Los Angeles, Calif. Mr. Ellis has been affiliated with the Pittsburgh Testing Laboratories since 1910 and has been General Manager and Director since 1921.

Schultheis Opens New York Office

Roland Schultheis has announced the opening of an office for the professional practice of landscape architecture and town planning in the Longacre Building, 1476 Broadway, New York. Mr. Schultheis also has a studio at Flushing, L. I. His work covers town properties, subdivisions, cemeteries, recreational areas, school grounds, golf courses, institutional developments, parks, airports, civic centers, town planning, zoning ordinances and plans and topographical surveys.

Taylor Forge and Pipe Works

The American Spiral Pipe Works, 14th Street and 48th Avenue, Chicago, Ill., has changed its name to Taylor Forge & Pipe Works. The company, which has been serving the engineering trades since 1900 under the old name, remains unchanged in ownership and capital structure. The change is one of name only and has been made for the convenience of customers who were not wholly familiar with the company's wide range of products for high-pressure service, including Taylor spiral pipe, forged steel flanges, forged nozzles for boilers and high-pressure vessels and forged welded pipe.

THE NEW FORD STRAIGHT-LINE METER YOKE

Don't Blast—"Mill" Through with the Barber-Greene

There are two big reasons why Barber-Greene Ditchers can lick the tough digging jobs that make ordinary ditchers call for high-priced pick and shovel work —or even blasting.

First — the B-G Vertical Boom goes straight down — the shortest distance through the hard material.

Secondly—held solidly against the face, the B-G Vertical Boom "mills" through material that ditchers with sloping booms cannot dig.

And back of the proved correctness of Barber-Greene design are parts made of special alloy steels where the strains and wear are hardest.

If you're looking for a ditcher that has speed—yet is built to dig through anything that's "diggable"—send for a copy of "Ditching Snapshots and Records." There's no obligation.

BARBER-GREENE COMPANY, 515 W. Park Avenue, Aurora, Illinois

BARBER GREENE

When you write for that catalog, kindly mention THE AMERICAN CITY.

COLLECTION TRUCKS FOR GARBAGE USED BY DEPARTMENT OF STREET CLEANING, NEW YORK CITY

Special Types of Garbage Bodies for New York City

On a recent order the Wood Hydraulic Hoist & Body Co., Detroit, Mich., delivered to the city of New York, 134 special garbage units. Installation was made by the Wood Hydraulic Hoist and Body Co.'s New York branch on Model S, 178-inch wheelbase American-LaFrance chassis with a Wood M-5 mechanical hoist to furnish the lifting power.

There were two separate designs of bodies, 15 being the Type W-34 with sliding steel covers, shown at the top left, and the remaining 119 the Type W-36 with hinged extension side boards. They are designed to handle from 4 to 14 cubic yards of garbage, rubbish or snow. The majority of these units are equipped to take snow-plows, so that during the winter months they may be used for snow removal, thus keeping the truck profitably engaged the year round.

The very important feature is the exceptionally low mount secured by mounting the hoist between the truck frame members, thus permitting easier loading.

The Type W-34 special garbage body has sliding steel covers in four sections with a manually operated tail-gate. It is constructed of high-carbon blue annealed sheet steel, hot-riveted and electrically welded for watertightness. The rear end is tapered 20 degrees to allow the contents to flow freely when dumping. The Type W-36 is similar to the Type W-34, except that it has hinged extension side boards with a patent tail-gate which hinges underneath the body when dumping, but has no steel covers. Tarpaulin covers may be used.

Lyle Signs, Inc.

On January 1, the Lyle Culvert & Road Equipment Co., was absorbed by the Foote Bros. Gear & Machine Co., Chicago, Ill., along with the Bates Tractor Co., Joliet, Ill., the Northwestern Steel & Iron Corporation, Minneapolis, and one or two other organizations manufacturing allied products. The Sign Division of the Lyle Culvert & Road Equipment Co. was repurchased by A. B. Wilder, former President of the Lyle Culvert & Road Equipment Co. The Sign Department is now incorporated separately under the name Lyle Signs, Inc., for the purpose of manufacturing and selling traffic signs, road signs, street signs and signals and novelties. A. B. Wilder is President and Treasurer, and F. L. Pierce, Vice-President and Secretary.

While the directing personnel remains unchanged, new facilities are offered for increasing the manufacturing and selling activities. This also makes it possible for Lyle Signs to establish an identity of its own, as it is no longer a division of another corporation. A new factory building is to be constructed this summer and all activities broadened and strengthened.

Bennett Made Sales Manager

The Highway Shoulder Machine Co., Effingham, Ill., has announced the appointment of William M. Bennett as Sales Manager. Mr. Bennett was formerly connected with the Lehigh Portland Cement Co.

Akers Joins Cox Agency

The Cox Advertising Agency, Inc., Birmingham, Ala., has announced the association of Arthur K. Akers as Account Executive in charge of industrial advertising, handling the new accounts of Wayne Cast Iron Pipe Co., Birmingham, Ala., and Pacific States Cast Iron Pipe Co., Provo, Utah.

Doors for Airplane Hangars

A special door for airplane hangars in which limited space is available for operation of the door units in opening and closing has been developed and is being manufactured by the Truscon Steel Co., Youngstown, Ohio. This door is applicable to any kind of hangar construction and is not limited to Truscon standard steel hangars.

The frame of the door is of heavy gage tubular copper alloy steel, mitered and reinforced at the corners and electrically welded at all joints, or, if preferred, structural steel may be substituted for tubes in the frame. The lower sections are solid steel panels made from cold-rolled copper alloy sheets full pickled, reannealed and patent leveled. Any desired area may be

Nothing Equals the Motorcycle Policeman for—

PREVENTING Speeding

MOTORCYCLE POLICEMEN, Harley-Davidson mounted, are the most effective means of *preventing* speeding and dangerous driving.

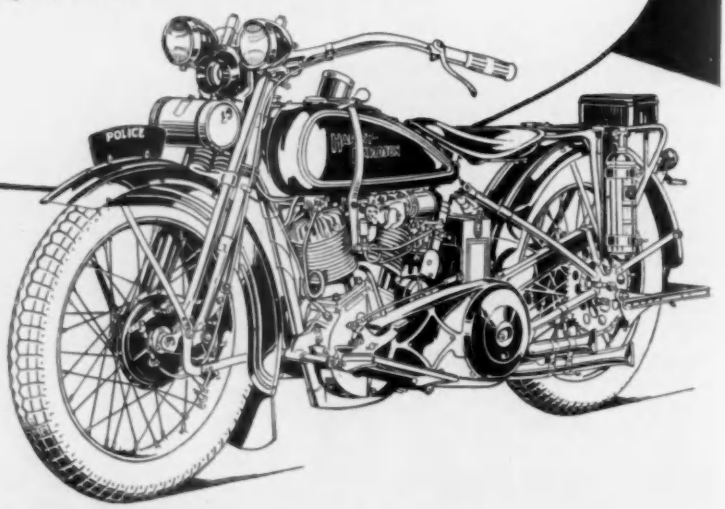
A glimpse of the motorcycle officer's uniform — even of his Harley-Davidson alone — is enough to check illegal driving. It is not the *arrests* he makes, but his *preventive value* that makes the motorcycle officer invaluable in modern traffic control.

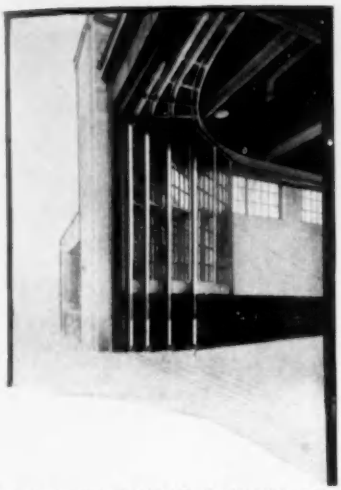
Let us send you our Special Police Booklet — it will show you clearly the reasons why Harley-Davidson Motorcycles have been chosen by more than 3000 Departments.

Write us today — a postal will do.

HARLEY-DAVIDSON MOTOR CO.
DEPARTMENT M MILWAUKEE, WISCONSIN

HARLEY-DAVIDSON
The Police Motorcycle



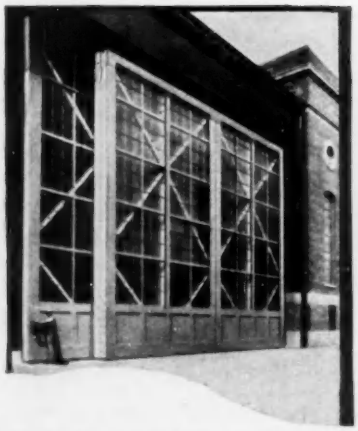


THE FORD HANGAR, LANSING, MICH.

built of standard steel window sections to permit adequate daylighting of the hangar. The door design is in harmony with recognized architectural practice, thus giving to the building a unified and effective exterior.

Truscon hangar doors are not suspended from overhead tracks but are equipped with Timken roller-bearing trucks operating on tracks imbedded in the concrete floor. Alemite lubrication maintains these trucks for easy operation. Even the large 20-foot leaves, each 35 feet high and weighing 7 tons, used in the airplane assembly building at Wright Field, are easily and quickly opened or closed by one man. This is made possible by a special operating device incorporated in each door. A light guide-rail at the top insures accurate alignment without adding to the weight supported by the wide-spanning overhead structure.

These doors are made to operate in either of two ways. One of the most modern hangars, including the one at Bettis Field, McKeesport, Pa., the Canadian Colonial Airways hangar at Albany, N. Y., and the Newark, N. J., airport hangar, used straight slide doors which when opened disappear into towers or other auxiliary portions of the hangar structure. This arrangement is popular because it leaves the entire hangar opening unobstructed, admitting a 100-foot ship to a 100-foot hangar. The architectural effects provided in most new-type hangar construction provide convenient storage space for the doors of this style when they are open.



THE ASSEMBLY BUILDING, WRIGHT FIELD, DAYTON, OHIO

Around-the-corner doors which fit snugly against the sides of the hangar near the openings are used in the U. S. Air Service assembly building at Wright Field, Dayton, Ohio, on the N.A.T. hangar at Chicago and on many other up-to-date structures. They are preferred where the plan of the building does not provide space for the opening of the straight slide doors and where there is no objection to narrowing slightly the door opening by storing opened doors at the sides.

An attractive feature of these new doors, aside from their adaptability to any size or type of building, is their comparatively low first cost. This results from large quantity production of the standardized parts from which individual section doors are built up exactly to meet individual hangar requirements and architects' specifications.

De Lavaud Pipe Available in 18-Foot Lengths

In the early days of the manufacture of cast iron pipe, the individual lengths commonly produced were from 3 to 4 feet. As the industry developed, these lengths were increased to 9 feet, which for a number of years was recognized as the standard length for cast iron pipe. Shortly after the introduction of vertical casting in dry sand molds, this length was increased to 12 feet, which then became the recognized standard and still constitutes the major portion of cast iron pipe produced in the United States.

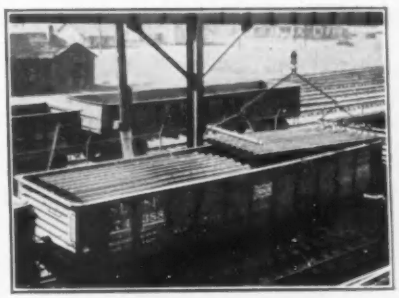
In 1914, individual lengths 16 feet long were produced under the vertical sand cast method, and until the present time these have been the longest individual lengths of cast iron pipe produced in the United States.

The United States Cast Iron Pipe & Foundry Co., Burlington, N. J., has announced that it is now manufacturing 18-foot lengths of de Lavaud centrifugal cast iron pipe in all diameters 4 to 12 inches inclusive. A battery of casting machines for the casting of de Lavaud pipe in 18-foot lengths is in operation at the Birmingham, Ala., plant.

The advantages of 18-foot pipe can be readily visualized when it is considered that as compared with 12-foot lengths of pipe there is a reduction of 33⅓ per cent in the quantity of jointing material required, in the labor of making the joints themselves and the digging of bell holes. In the construction of plain end pipe lines for gas, the use of 18-foot lengths reduces the cost of couplings or special connecting pieces 33⅓ per cent and correspondingly reduces the labor involved in the installation of such couplings or special connecting pieces. Another feature is that with the longer lengths, there are fewer joints, thus reducing the number of possible joints of leakage in the finished pipe line.

The manufacturer calls attention to the fact that the equipment for handling the 18-foot lengths of de Lavaud centrifugal pipe need be no different from that used in handling 12-foot lengths of cast iron pipe. For example, the standard weight of an 18-foot length of 8-inch Class 150 de Lavaud pipe used for 150 pounds maximum working pressure is 629 pounds, while the standard weight of a 12-foot length of 8-inch Class C sand cast pipe used for 130 pounds maximum working pressure is 625 pounds. In other words, while the 18-foot de Lavaud pipe is 6 feet longer than the 12-foot Class C sand cast pipe, it allows an additional working pressure of 20 pounds and weighs only 4 pounds more.

Because of the decreased weight per foot as compared with the same diameters of sand cast pipe, the same number of men can be used to install 18-foot lengths of de Lavaud centrifugal pipe as are used for the installation of 12-foot lengths of sand cast pipe.



LOADING THE NEW 18-FOOT LENGTHS OF DE LAVAUD PIPE

Additions to Line of Protective Paints

Several important changes have been made in the line of protective paints which have been manufactured by the Joseph Dixon Crucible Co., Jersey City, N. J., for more than 65 years. Dixon's industrial paint, known as Dixon's silica-graphite paint, has been increased in range of colors from 8 to 14 colors, which include a straight aluminum paint and also a standard red oxide paint. This color range meets more completely all standard color requirements for metal and wood protective coatings. The bright aluminum paint contains a durable spar varnish as its vehicle, giving great resistance to the elements and insuring the life and brilliancy of the pigment.

Dixon's utility paints have been added as standards, three of which are graphite-pigmented, the fourth, oxide of iron. Dixon's maintenance floor paints have been developed for the protection of wood, composition, linoleum, cement and concrete floors. They are immune to the action of alkali and are particularly adapted for cement and concrete floor coatings, as they effectively prevent dusting of concrete floors. They may be used inside or out and will withstand sleet, rain, snow and climatic changes. These are made in eight standard colors.

Everything for a Pipe System

THE Clow-National organization furnishes everything for a pipe system. We make what you want. We have no hobbies. We are not interested in pushing the sale of any special kind of pipe, or pipe equipment.

With two foundries in Ohio and one in Alabama, we have enormous production capacity. We fill your orders promptly. Anything from a trainload of pipe to a 75-pound sleeve receives the same prompt attention.

The affiliation of James B. Clow & Sons, and the National Cast Iron Pipe Company, places at your service the facilities of the most complete organization in the country for the manufacture of pipe and pipe system equipment.

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Cast Iron Pipe (2" to 48") 12', 16' or 18' lengths
Sand-cast
Centrifugal
Bronze-welded
Cement-lined
Cast iron fittings
Flange pipe
Flanged fittings
Hydrants
Valves
Service pipe
Special castings for all kinds of pipe systems

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James B. Clow & Sons *Chicago, Ill.*

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CLOW-NATIONAL
CAST IRON PIPE
"Everything for a Pipe System"

DIXON'S
BELT DRESSING

Leather, rubber, and fabric belts all grip better when treated with Dixon's Belt Dressing—and, this aid to longer belt life and better operation "goes on" without the slightest danger of "clogging" or harming the finest belt.

Its handy stick form permits belt dressing without the stopping of machinery. To use it, simply tear off part of the paper around the stick, grip firmly in the hand and hold it on to the moving belt. No loss of time—no dirt—no slipping belts—and in addition Dixon's "food for belts" will keep your belts in perfect condition.

If your belts are exposed to steam, spattering water, chemicals, or heavy dust condition, order—

DIXON'S TRACTION BELT DRESSING

a special paste dressing made specially for this type of service.

Circular 107-O will give you full information on each of these products.

JOSEPH DIXON CRUCIBLE COMPANY
Established 1827
Jersey City New Jersey

Just a Block or Two from Everywhere

THE Hotel Hollenden is ideally located for the convenience of the visitor whether he is in Cleveland on business or pleasure. Within a block or two of the Hollenden will be found the leaders in practically every activity of the city. Just a block or two away are the theatres, the shopping centers, the banks, the Public Auditorium and the principal office buildings. Located right in the heart of things, the Hollenden has for decades served the requirements of the most discriminating visitors.

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THE HOLLENDEN

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750 Quiet Restful Rooms Each with Bath

Single $2.50 to $4.00 per day
Double $4.00 to $5.50 per day

Sleeping rooms in the Savoy Hotel are correctt in appointments and invitingly spacious at a very moderate price. You may choose practically any sort of accommodatioon.

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